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Articles

THE STORAGE OF TISSUES FOR SURGICAL TRANSPLANTATION

BY

Surgeon Lieutenant-Commander H. H. G. EASTCOTT, R.N.V.R.

To replace the ravages of injury or disease by grafting has long been an important principle in surgical treatment. At present, with few exceptions, it is best to use human tissues for this, and an understanding of the fate of such grafts is essential if we are to make the best use of them. Some remain alive and others serve as an inert framework for repair processes originating entirely in the host.

Autogenous grafts, that is those which are taken from the subject to be grafted, in many cases survive as intact tissue. Skin is the most familiar example. Alexis Carrel in 1912 showed that skin could be successfully grafted after storage for some days just above its freezing point. In recent years this property has been utilized and spare skin is stripped in vaseline gauze and is kept in a refrigerator for use in covering defects in subsequent dressings. In practice the use of many autografts is limited by the supply. Nerve, artery and tendon are thought to survive and function normally after autografting but circumstances in which they can be spared from the donor site are few. The surgeon therefore turns to homografts to meet his needs.

Homografts, those which are taken from a member of the same species, hardly ever survive as living tissues, though several workers have recently found conditions in which survival does occur. The anterior chamber of the eye is sometimes able to tolerate homografted tissues of many kinds and even those from another species. This may partly explain the good results of corneal homografting in man.

STORAGE PROBLEMS

With autografts there is little difficulty over storage: skin, bone, tendon, fascia and vein need not be taken from their donor sites until needed to fill a defect. The patient is thus his own bank. Spare material can be looked upon

refrigeration at 0° to 4° C. in nutrient media such as Tyrode's solution with 10 per cent homologous serum for [illegible] or more.

It is with homografts that storage problems occur. They must be kept in such a way as to be available at short notice and in many places. The demands of war have brought great advances in tissue banking. Blood was the first homologous material to be extensively stored for routine use. It is one of the tissues in which survival in the recipient must be provided for; only refrigeration has achieved this so far. No fully satisfactory method of freezing or drying blood for transfusion has been discovered, though recent work promises that frozen blood banks may be developed in the future. Cornea may be one of the homografts which survive; the unfavourable results of using dead and denatured corneal grafts tend to confirm this. Endocrine tissues have long attracted interest because of the possibility of homografting them in treating deficiency conditions. Halsted considered that in these circumstances the host might tolerate foreign cells better and react to them less vigorously because it needed them. Many years later it was discovered that patients with adrenal and thyroid insufficiency have much more than the normal amount of circulating adrenotrophic or thyrotrophic hormone, a factor which would tend to support the much needed homograft in these patients.

A method of preserving life at very low temperatures would be of the greatest interest and value to workers in all fields of biological science, but particularly to surgeons. At the National Institute for Medical Research, Mill Hill, Dr. A. S. Parkes and his colleagues have since 1949 been developing with considerable success a new technique for the protection of tissues from damage during freezing and thawing. This involves their preliminary treatment in solutions containing 15 per cent of glycerol. Such differing cells as fowl and bull spermatozoa, rat ovary and human and rabbit red blood corpuscles have been stored at −79° C. for long periods and have been shown to survive and to function after thawing. These are all tissues whose homografting value depends upon their being alive when transplanted.

At present much more use is made of homografts which are dead at the time of transplantation or shortly afterwards. Bone and artery are examples of this type of homograft. Even chemical fixation with strong antiseptics is sometimes compatible with successful tissue replacement by such grafts, for they act only as a mechanical support for the healing processes of the host. But dead homografts give the best results if they are transplanted in a fresh condition, that is without denaturation of their proteins by physical or chemical preservatives. To provide material of this kind the methods used by serologists and food technicians have been adopted, the two of greatest value for storing homografts are deep freezing and freeze drying.

Deep Freezing

The Eskimo's practice of storing fish in frozen caches was put into commercial use for storing a great variety of foodstuffs in the years between the two wars. A working temperature of −17° C. as provided by the commercial electrical

deep freeze is sufficiently cold to preserve flavour and appearance Most of the enzymes which would alter these are inactive at such temperatures Serological materials and tissues containing viruses need to be kept much colder or deterioration will occur during storage The usual practice is to pack such materials in sealed containers in a cork insulated box with a relatively large amount of solid carbon dioxide This substance can be delivered regularly in most large towns and enables the low temperature of −79° C to be maintained indefinitely Very few changes occur in material stored in this way although those that do may be sufficient to kill cells which might have survived the initial freezing Treating the tissues with 15 per cent glycerol in Ringer saline greatly increases the chance of their surviving freezing storage and thawing when surviving homografts become a practical part of surgery this is the type of storage that will be needed Already veterinary practice is adopting it for the storage of semen for artificial insemination with extremely successful results

Grafts, such as bone cartilage and blood vessels which need to be stored in permanently fresh condition, though not necessarily alive are well adapted to the deep freeze technique The actual temperature needed depends upon the tissue but electrical freezers at −17° to −20° C are cold enough for most purposes Blood vessels are probably best kept at −79° C since it is the best reaction to them which is critical (Hufnagel and Eastcott 1952) So far no electrical appliance has been produced which will maintain these very low temperatures as simply and reliably as solid carbon dioxide At St Mary's Hospital London an artery bank using this principle has been in routine use for the past two years (figs 1 and 2) and 25 grafts from it have been used in patients with excellent early results in 20 of them This bank is also being used for the storage in glycerol solution of thin slices of adrenal gland and human corneal grafts The adrenal slices are mainly those which were obtained at operation from patients with hyperfunctioning glands in conditions such as Cushing's disease and malignant hypertension After subtotal adrenalectomy

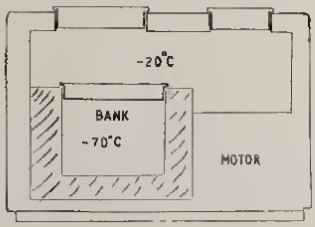
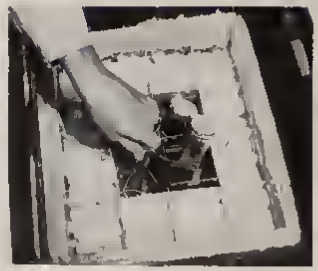


FIG 1 —Section of commercial deep-freeze fitted with Perspex box which is surrounded by 4 in of cork insulation



[illegible] showing solid CO_2 [illegible] the centre containing [illegible] brass

a deficiency condition may develop and it is hoped that these permanently stored autografts will be useful in restoring a normal balance in such cases. Nine frozen corneal grafts both lamellar and full thickness have been used with only one failure and though at the time of writing the longest period of observation is only six months in one patient 6/ vision has been regained using a penetrating graft which had been stored at [illegible]/9° C. for ninety five days in 15 per cent glycerol saline.

The most serious limitation of deep freezing is the need to maintain such low temperatures at all times; transporting the grafts can be difficult solid carbon dioxide or an alcohol freezing mixture containing it must be used to fill the portable container in which the grafts are to travel. This complicates the procedure and limits the time for the journey. The longest distance which S. Mays have sent a frozen arterial graft was 173 miles by passenger train from Paddington to Exeter. It was successfully used the following day after being overnight in the large CO_2 filled thermos pot in which it was despatched.

Freeze Drying

It has been known for centuries that food and many other materials can be preserved by drying. Of modern methods of drying the most important is freeze drying (Greaves 1936). The principle of this is to freeze the substance and then by exposing it to a high vacuum to remove its water content by sublimation so that the residual moisture content is less than 1 per cent of the weight of the dried material which can then be permanently stored at room temperature. Removal of moisture is excluded. Freeze-dried or lyophilized proteins whether [illegible] cellular or as a tissue can be quickly reconstituted by the

addition of water Familiar examples are pooled plasma and penicillin the large-scale production of which was begun during the war The histological feature of reconstituted tissues are well preserved in fact this method of fixation is used by pathologists when cytochemical studies are to follow

Freeze-drying promises to become an important method in tissue banking Permanent storage at room temperatures is compatible with a reconstituted product which is often chemically and structurally indistinguishable from its original condition Life does not readily survive the process even bacteria such as streptococci and the spore bearers which are resistant to drying tend to be killed by prolonged and unprotected drying This may prove to be a valuable incidental property of freeze drying in tissue banking in contrast with deep freezing which fails to exert any sterilizing action upon the stored tissues

In its initial stages banking by freeze drying is more complicated than deep freezing but this is more than outweighed by the simplicity and economy of storage and transportation

The necessary apparatus (fig 3) is available in many biochemical and sero

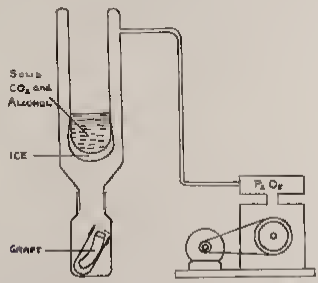


FIG 3—Diagram of apparatus used for freeze-drying tissue grafts A larger drying flask may be used to accommodate a batch of grafts each in its original tube Note that the rubber cap is replaced by a sterile gauze bacterial air filter to prevent cross infection during the readmission of air the system which therefore need not be sterile

logical laboratories and generally needs little adaptation to dry tissues When these are in thin layers as for example skin blood vessels bone chippings or small nerve grafts drying itself suffices to keep the tissue frozen Larger samples need to be kept cold by some external medium this in turn slows the rate of drying

A great deal of development work needs to be done on the banking of

tissue but with understanding of the principles and processes involved there is no reason why existing apparatus should not be used to set up stores of suitable material The results of using this may then occasion the development of special equipment which would employ a simplified and continuous process requiring the minimum of technical supervision

The Future of Tissue Banking

Whether the obstacles which still remain and limit the practical use of surviving homografts will be overcome will decide which form the tissue bank of the future will take. At present glycerol protected freezing is the most promising method for storing living homografts Some similar process may in future enable tissues to survive drying as well It is safe to say that we are only now beginning to see the results which can be achieved by homografting stored tissues and that a new field in surgical treatment lies ahead

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THE USE OF HYPOTENSION IN SURGERY

BY

VICTOR McCORMICK

The time has now arrived when a sufficient body of evidence has accumulated to allow an estimate to be made as to the value of induced or as some optimistic writers call it controlled hypotension

The writer has had an interest in this subject since reading the work of Griffiths and Gillies in 1948 and seeing their work the following year in Edinburgh About the same time the properties of hexamethonium and pentamethonium were first described and by 1950 papers had been published on the subject by Davison (1950) Enderby (1950) and Orgaue

Pentamethonium was at one time recommended as an antidote to decamethonium when the latter was used as a muscle relaxant When used for this purpose it was readily seen that it caused very marked falls in blood pressure This resulted in its being rapidly abandoned for use as an antagonist to decamethonium and also caused a rapid—and perhaps too hasty—abandonment of decamethonium too

At a combined meeting of the Sections of Anæsthetics and Surgery of the

Royal Society of Medicine Wyttan (1953) reported 1 000 cases in which hypotension was induced with pentamethonium Mr Cox discussed these cases from the viewpoint of the surgeon and Gillies reported on a total of 802 cases in which hypotension was induced by high spinal anæsthesia (Wyman, 1953)

Hypotension from syncope no doubt helped the surgeons of the pre anæsthetic era to complete an operation quickly without an undue loss of blood In more recent times the use of chloroform which caused some degree of hypotension was advocated by some surgeons because of the diminished blood loss It is not proposed to consider these possibilities further

Three other methods of inducing hypotension have received serious consideration in recent times

(1) Arteriotomy and subsequent re-transfusion
(2) High or total spinal
(3) The use of drugs such as hexamethonium and pentamethonium

Gardiner and Hale in the U S attempted to reduce bleeding in intracranial operations by arteriotomy and reported considerable success with the method Bilsland from Edinburgh described the technique and reported 63 cases of craniotomy in which he endeavoured to keep the blood pressure about 80 systolic One case was kept below 100 mm Hg for six hours without ill-effect and the results are described as generally satisfactory

There are however several serious objections to this method

The actual technique is formidable necessitating the insertion of a cannula into the radial artery the prevention of clotting by heparin, and the maintenance of a vascular see saw of exsanguination and re transfusion as dictated by the sphygmomanometer—not always a perfect guide to the patient's condition

A more serious objection to the method is that it is substantially the same as the technique employed to produce shock experimentally in dogs and may be expected to produce the same results in man The fact that the re transfusion is arterial is probably a considerable safeguard against the patient progressing from a state of hæmorrhagic hypotension to one of irreversible shock There is reason to believe that the intra arterial transfusion raises the arterial pressure sufficiently to increase the coronary arterial flow with consequent improvement in cardiac efficiency and rapid improvement in vascular tone thereby reducing the risk of producing a state of irreversible shock

In general the method would appear to be one which is only suited to a special team following a particular line of research and quite unsuited to ordinary use

Having reviewed the work of Kostec Vers and other earlier workers and particularly the observations that concentrations of procaine as low as 0 2 per cent were capable of causing paralysis of the vasoconstrictor fibres at the same time leaving motor and sensory fibres almost intact Gillies devised his technique for the establishment of total spinal anæsthesia

Total spinal is of course not quite an accurate description It is in fact a total anæsthesia of the sympathetic outflow from the spinal cord with an

associated ataxia and muscular paralysis limited to the lower segments. This gives a marked hypotension with vaso dilatations and a Trendelenburg or other type of head down position is used to maintain an adequate cerebral circulation and encourage anaemia of the operating field.

Owing to the very uncomfortable position it is usual to give light narcosis with thiopentone followed by nitrous oxide with excess oxygen. It should be emphasised that hypotension and heavy doses of narcotic drugs are a lethal mixture and, similarly, a lack of oxygen from any other cause associated with hypotension is a potential killer.

The technique is straightforward and only requires careful attention to detail.

> The patient is anaesthetized with a small dose of thiopentone, lumbar puncture performed and a suitable amount of procaine—150–250 mg. in about 3 ml. injected. The patient is then placed in steep Trendelenburg position and the solution allowed to gravitate cephalad. From now on nitrous oxide with excess oxygen is administered as adequate oxygenation is absolutely essential when the hypotension develops.

The beauty and simplicity of this method is now apparent. As the solution approaches the medulla some of it becomes fixed by the tissues and the residue becomes increasingly diluted with spinal fluid. As this occurs the effect of gravity becomes less, thereby slowing the further spread of the solution. If any anaesthetic should reach the medulla it will be so dilute as to be no menace to the vital centres.

Many of Gillies' cases were for lumbo-dorsal splanchnicectomy and sympathectomy and these were, of course, operated on in the lateral pick knife position. In this position the legs are found to constitute a readily available reservoir of blood for raising the pressure. If the legs are raised there is a spill of blood from the dilated vessels and this almost always results in a rise in blood pressure.

Provided that the respirations are adequate and the tissues in the wound appear fully oxygenated, inability to record the blood pressure is regarded without anxiety. Any suspicion of cyanosis is an indication for action. If ventilation is adequate, steps are taken to raise the pressure as already indicated by raising the legs and lowering the head. If necessary pressor drugs, which are usually effective, may be administered.

Many of the patients in Gillies' series were very poor risk cases and this should be borne in mind when his results are considered. They might aptly be described as the halt, the lame and the blind.

We have used this method in a small number of cases for abdomino perineal resection of rectum and also for panhysterectomy. The only one which gave trouble was due to inadequacy of anaesthesia, not to the hypotension, and was due to an error in dose and choice of drug. We prefer Nupercaine for these pelvic cases where better muscular relaxation and more prolonged anaesthesia is required.

The technique is within the capacity of any competent anæsthetist working in hospital with the ordinary amount of help and equipment but at the risk of becoming tedious it should be repeated that small doses of narcotic drugs and insistence on adequate oxygenation are essential

The third method—the use of methonium compounds—is the method which is most widely used at present The pharmacology of the three methonium compounds is somewhat confused and confusing Generally decamethonium has been held to act at the myoneural junction and cause paralysis of muscle—for which purpose it was introduced Pentamethonium which was introduced as an antidote to decamethonium usually causes marked fall in blood pressure and even in doses which do not cause a marked fall there is a greatly increased sensitivity to posture The action of hexamethonium is similar to pentamethonium and both act by paralysing the autonomic ganglia They may also cause dilatation of pupil muscular relaxation or occasionally cardiac irregularities Decamethonium on the other hand is capable of reproducing at least in part, the properties we have attributed to the other drugs

There does not appear to be any strong feeling as to any advantage or disadvantage between pentamethonium and hexamethonium Wyman says he uses pentamethonium because he started with it and knows of no advantage in changing Hale Enderby, who has written on the subject stated that he changed from pentamethonium to hexamethonium because he considered it a superior drug but gave no specific reason

Technique is simple but must be thorough There are three phases First the induction of light general anæsthesia and intubation The latter should be regarded as very important owing to the necessity already stressed for adequate oxygenation Second the administration of an adequate dose of the chosen drug The estimation of the correct dose is not easy and is complicated by the fact that repeated small doses often fail to produce as good results as a single larger dose In general hypertensives old people and those who show labile pressures with sedatives will react to smaller doses than young active people who may be resistant even to very large doses

Third the production of postural ischæmia to assist the operation In this connexion it must be borne in mind that if the head be raised to produce ischæmia of neck or face the brain will share this ischæmia

If satisfactory hypotension is attained it is likely to last beyond the duration of operation At first it was usual to give some pressor drug at the end of the operation to try and demonstrate any vessels likely to bleed It is now generally accepted that this is bad practice and that the extra period of hypotension is likely to assist the formation of firm thrombi in the vessels before they have to resist raised blood pressure Patients are normally nursed in a slight head down position for the first twelve or twenty four hours

This method requires a high standard from the anæsthetist not only must he understand clearly the principles on which the method is based but his care during the operation must be unremitting and the method should not be attempted in the absence of adequate skilled help to deal with any emergency

We have described the methods of producing hypotension in which are in vogue at present, and wish now to discuss what benefits may be expected from them and what dangers may be feared

The first, and one of the fundamental points to be emphasized is that both the methods which have been outlined give rise to hypotension with vasodilatation This is in direct opposition to the state of affairs in shock with or without hæmorrhage in which you have hypotension with vasoconstriction The significance of this is that with vasodilatation there is not the same danger to the vital organs Freeman (1938) showed that dogs which had been sympathectomized did not reach the stage or irreversible shock from hæmorrhage and when sacrificed did not show the histological changes in liver kidneys and intestine which are usually associated with irreversible shock It is probable that similar changes in the brain such as the changes in the pituitary associated with shock and hæmorrhage would be less likely to occur

The mere prevention of loss of blood can hardly be regarded as sufficient justification for so complicated a method but certain other benefits must be considered

In certain operations the improved visibility allows a much more accurate distinction between healthy and diseased tissues and allows a surgeon to appreciate when he strays beyond the bounds he has set himself

Plastic operations are enormously facilitated by the use of hypotension Experienced plastic surgeons say that they can frequently do as much in one session with hypotension as they would have attempted in three without and claim that the work is better done Neurosurgery is greatly facilitated not only by the relatively bloodless field but because the less vascular brain may need less retraction

Saving of time may allow of more being done at one session but it must be clearly understood that the patient's life is not to be put in jeopardy so that the surgeon can get off to golf a little earlier

The fine post operative condition of these patients has been thought to be more than could be accounted for by the reduction in blood loss It is now believed that these ganglion blocking drugs do in fact protect the patients from some of the trauma of the operation as well as saving blood loss On this account the use of the method was extended to cases of major surgery where blood loss was not regarded as of great significance and in these cases also the results were regarded as very satisfactory

Wyman (1952) has carried the matter a step further In his last communication he describes two cases who were in what appeared to be irreversible shock Both were elderly people with profuse hæmorrhage from gastric lesions who had failed to respond to transfusions and were undergoing operation as a last resort Shock was profound and as no improvement was apparent he gave C5 with dramatic benefit The vasodilatation caused marked improvement and though the first patient subsequently succumbed the second one—a perforation associated with hæmorrhage—made an uninterrupted recovery after showing no response to massive transfusion

Whilst receiving these last reports with a becoming reserve it is not by any means impossible that some benefit may accrue from the opening up of the vascular bed by the ganglion blocking agents Acceptance of this idea would necessitate abandoning the idea that the vasoconstriction which is such a feature of shock is beneficial by conserving blood for the vital organs Our ideas of the vascular mechanisms in shock are not well enough founded for us to dogmatize in this matter

The method is not without risk there is the very greatest need for attention to every detail Restraint and judgment in the use of narcotics, and the maintenance of an adequate supply of oxygen may seem very elementary matters but it is in such errors that the root of most of the disasters is to be found

Reactionary hæmorrhage is a danger which springs to the mind at once in cases where only the larger vessels are visible even as a trickle of blood Provided that the surgeon trains himself to remember that even the most insignificant bleeder represents an important vessel hæmorrhage should not be troublesome A slow return to normal pressure level probably assists by giving time for firm thrombi to form in vessels At first many workers gave methedrine or other pressor drugs at the end of the operation with the idea of showing any dangerous vessels but the general opinion now is that there is greater safety in allowing a gradual return to normal

Cerebral thrombosis has been reported after operation but the incidence of it has not been such as to suggest that it was attributable to the hypotension If pressures are low extreme ischæmia should not be provoked by elevation of the head

Renal function does not appear to be depressed beyond the direct effect of the low pressures Oliguria has been noted in a number of cases but has never caused any anxiety

Cardiac action has been satisfactory in spite of the hypotension Decreased peripheral resistance should decrease the cardiac load more than reduced coronary pressures decrease the cardiac efficiency Wyttan's cases include two cases of cardiac death both of these were due to errors of technique in allowing a transient anoxia which was too much for an already damaged heart muscle

A hazard which might not be appreciated at once is that if hæmorrhage occurs it may be extremely difficult to control should it occur in an area which is not avascular The effect of hæmorrhage in a patient whose compensatory mechanism has been upset may be disastrous unless rapid replacement is effected A hypotonia beyond control may then supervene with secondary cardiac failure

It is fair that the author should be expected to express some personal opinion on the matter which has been offered His experience so far and the study of the experiences of others leads him to the opinion that there is a place for hypotonia in surgery that it should not be attempted except when the underlying principles are understood, and when ample skilled help is available to carry out the necessary control The cases should be ones in which substantial benefit may be expected from the hypotonia In the absence of further con

[illegible] improved condition of [illegible] operative [illegible] should [illegible] considerable reserve It is quite [illegible] subject a patient [illegible] for example a fenestration operation [illegible] hypotonic The [illegible] suggestion can offer this patient is a possibility that the good [illegible] may lead to a better post-operative hearing gain of perhaps 5 [illegible] 10 per cent As against that the patient is put in peril of his life [illegible] balance sheet On the other hand [illegible] number of [illegible] have demonstrated to us beyond doubt that this [illegible] which should be extended to every suitable case without undue [illegible] other techniques will become available and newer drugs will be [illegible] which will be more certain in their action and more controllable [illegible] are preliminary reports of at least one preparation Arfonad [illegible] which is much shorter in action than the methonium compounds [illegible] produces a fall in blood pressure It is not certain that the shorter [illegible] of these new drugs will not make [illegible] hæmorrhage more [illegible]

As far as can be foreseen the practice of induced hypotension will be improved and the risks diminished with increased experience If careless workers attempt to use the method without adequate precautions, unnecessary [illegible] will occur and a valuable aid to surgery will inevitably fall into disrepute

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CLASSIFIED MEDICAL REFERENCES IN THE WORKS OF SHAKESPEARE

BY

Surgeon Commander J W L CROSFILL, R.N

PART VI

HEART

750	*Malcolm*	The grief that does not speak Whispers the o'er-fraught heart and bids it break —*Macbeth* iv 3
751	*Macbeth*	The mind I sway by and the heart I bear Shall never sag with doubt nor shake with fear —*Macbeth* v 3
752	*Iago*	Your heart is burst —*Othello* i 1
753	*Desdemona*	I never yet did hear That the bruised heart was pierced through the ear —*Othello* i 3

Similarly in Spenser Faerie Queene Which passing through the eares would pierce the hart)

[illegible]

[illegible]	[illegible]	I cannot heave [illegible] into my mouth —*King Lear* I 1
777	[illegible]	[illegible] idle thou marble hearted fiend —*King Lear* I 4
778	*Gl*	[illegible] his old heart is crack d —*King Lear* II 1
779	*L*	[illegible] heart my rislut heart —*King Lear* II 4
780	[illegible]	[illegible] Hurt [illegible] into a hundred thousand flaws —*King Lear* II 4
781	*Edgar*	[illegible] but his flaw d heart Al[illegible] the conflict to support! [illegible] extremes of passion joy and grief [illegible] —*King Lear* V 3
782	*Ha*	[illegible] such a flint and milky heart —*Timon of Athens* III 1
783	[illegible]	[illegible] heart is crack d and burn d A[illegible] wherewith my life should sail Are [illegible] thread one little hair My heart [illegible] poor string to stay it by Which holds but till thy news be uttered —*King John* V 7
784	*King Richard*	Swell st thou proud heart? I'll give thee scope to beat —*King Richard II* III 3
785	*Queen Elizabeth*	Ah cut my lace asunder That my pent heart may have some scope to beat —*King Richard III* IV 1
786	*Queen Elizabeth*	Harp on it still shall I till heart strings break —*King Richard III* IV 4
787	*Surrey*	I would there something that would fret the string The master cord of his heart!—*Henry VIII* III 2
788	*Leontes*	I've tremor cordis on me —my heart dances But not for joy —*Winter's Tale* I 2
789	*Paulina*	Woe the while! O cut my lace lest my heart cracking it Break too —*Winter's Tale* III 2.
790	*Parolles*	Yet are I thankful if my heart were great 'Twould burst at this —*All's Well That Ends Well* IV 3
791	*Benedick*	I would I could find in my heart that I had not a hard heart for truly I love none
	Beatrice	I thank God and my cold blood I am of your humour for that —*Much Ado About Nothing* I 1
792	*Duke*	And pluck commiseration of his state From brassy bosoms and rough hearts of flint —*Merchant of Venice* IV 1
793	*Ford*	My heart is ready to crack with impatience — *Merry Wives of Windsor* II 2
794	*Duke*	Unfit to live or die O gravel heart!—*Measure for Measure* IV 3
795	*Phile*	his captain's heart Which in the scuffles of great fights hath burst The buckles on his breast reneges all temper And is become the bellows and the fan To cool a gipsy's lust —*Antony and Cleopatra* I, 1 (reneges renounces)

796 *Antony* O cleave my sides!
Heart once be stronger than thy continent
Crack thy frail case — *Antony and Cleopatra* iv 11

797 *Troilus* When my heart
As wedged with a sigh would rive in twain — *Troilus and Cressida* i

798 *Coriolanus* This last old man
Whom with a cracked heart I have sent to Rome — *Coriolanus* v 3

Heart-burn

799 *Bardolph* Sblood I would my face were in your belly
Falstaff God a mercy! so should I be sure to be heartburned —
Henry IV Pt II iii 1

800 *Beatrice* How tardy that gentleman looks! I never can
see him but I am heart burned an hour after
Much Ado About Nothing ii 1

(The hour's interval between the stimulus and the onset of heartburn is interesting in that the pain is the typical reflex result of the stimulus of food or drink. Many passages in the Bible, Tantalizing, speeches in which the meaning is perfectly clear, show that Beatrice meant that in her case only heartburn followed stimulus or that the meal was delayed an hour. It is also to know if the meal and the heartburn accord. Shakespeare was aware of the whole sequence of events.

The leaves of Groundsel boiled in wine or water and drunke heale the paine and ache of the stomacke that proceedeth of Choler
— Lupton quoth the Text of the Stomacke with the heartburning and helpeth it when it is troubled with choler and quickeneth the appetite and causeth sleepe [9])

Heart Burial

It was the custom in the Middle Ages for people of position and substance to have the heart buried separately from the body either in another place or in a separate casket The reasons given for the custom are many of which religious devotion, sentimental attachment difficulty in transport and the prevention of putrefaction in bodies which had to lie in state are the most likely As soon after death as practicable an embalmment and exenteration were carried out Of the French practice Pare who died in 1590, writes ' the body which is to be embalmed with spices for very long continuance must first be embowelled that it may be embalmed and kept as the kinsfolk think fit also the brain shall be taken out Then you shall make deep incisions along the arms, thighs etc to let out the blood and give space for putting in the aromatic powders '

In England the task of preparing the bodies was carried out by the surgeons The Act of 1511 had forbidden any one to practise as a Surgeon unless approved by the Bishop of London or the Dean of St Paul's In 1604 the Barber Surgeons petitioned for protection of their rights epeninge searinge and imbalmeinge of the dead corpes to be apply belongeinge to the science of Barbery and Surgery And the same intruded into by Butchers Taylers Smythes Chaundlers and others of mecanicall trades unskilful in Barbery and Surgery And unseemely and unchristen defoceinge disfiguringe and dismembringe the dead corpes, and so that by there unskilful searinge and imbalmeinge

the [illegible] and growth of the contagious and [illegible] the place and [illegible] appearance

Apparently their interests were protected as we find in 1616 that the Barber Surgeons took action in one case

> Mr Michaell Markeland appearing to this Court at the request of our Mr he was here complayned of to have embalmed severall humane Bodies within this City against the ordinance This Company on that behalf being an Apothecary and not Surgeon approved according to Law our Freeman of this Company which Mr Markeland acknowledged [illegible] haveing heard the said ordinance and under him presumed not to do the like again

The preparation of the bodies the balming scoueing and scowering of the [illegible] with the webbe of lead and chest was an expensive business

The wax linen spices and incidental expenses for Henry VI in 1471 cost [illegible] Oil paid to one Hugh Brice

William Walker the surgeon who officiated on the body of James I received [illegible] Hill for Charles II 1685 gave the Royal apothecary £242 8s whilst the surgeons shared £100

In 1612 the Queen's apothecary in 1604 received £200 as his embalming [illegible] the customary funeral [illegible] at George II in 1760 the surgeons and [illegible] received £4 2 13s It would appear that whatever the cost of [illegible] in the past the cost of dying showed a steady increase!

Queen Elizabeth did not wish to be so dealt with after death Her wishes [illegible] disregarded on the authority of Cecil It is related that this was [illegible] carried out so that an explosion split her wrappings and the wood [illegible] fire which had to be new trimmed up Her heart was interred in [illegible] in a niche in the wall of the vault alongside that of her sister Mary I The entrails and bowels of Henry VIII were buried with due [illegible] in the Chapel at Whitehall whilst his body proper was buried in St George's Chapel at Windsor

Anne of Cleves who died in 1557 at Chelsea was buried in Westminster Abbey Her heart was buried in Chelsea Of her death the record exists " In primis her bodye was trancheed howelled spyced sweete cyled cered in lynnen clothe X folde and then chest'd by John Cressye waxe chandler with the help of Thomas Grenell Thomas Dey and Roberte Thrower who were servants of the waxe wynke there Item her howells were buryed afore the high awtere in the chauche Item wheroon was laid a purple with a white [illegible] and a tapic with the armes of the [illegible] Item they bury all

Coming to more recent times the hearts of David Livingstone and Thomas Hardy were buried separately from the body Both bodies are buried in Westminster Abbey Hardy's heart is in his first wife's grave at Stinsford in Dorset and Livingstone's heart and viscera were buried with ceremony by the natives at Bula in Central Africa

I am indebted for all the above references to Heart Burial by C A Bradford I S A published by Messrs George Allan and Unwin 1933

80t *Antony* My heart is in the coffin there with Cæsar
And I must pause till it comes back to me *Julius Caesar* III 2

802 *Talbot* [illegible] this late betrayed town
[illegible] lion's heart was burned —*H[illegible]*

Herb Gathering

For magical uses certain herbs had to be gathered at night [illegible]. Included in the ritual for collecting Mandragora was the ruling that it had to be gathered before sunrise on Sunday.

Some years ago in Clinical Excerpts (Bayer's) an illustration of a page from an old Chinese herbal was given. A free translation given to me read: 'The optimum time for distilling is in Autumn when there is a full and bright moon.'

The Saxon herbals stated that the plants must be dug up when [illegible] day and night divide. (12)

803 *Friar Lawrence* Now ere the Sun advance his burning eye
The day to cheer, and night's dank dew to dry
I must up-fill this osier cage of ours
With baleful weeds and precious juiced flowers.
The Earth, that's Nature's mother, is her tomb;
What is her burying grave, that is her womb:
And from her womb children of divers kind
We sucking on her natural bosom find,
Many for many virtues excellent,
None but for some, and yet all different.
O mickle is the powerful grace that lies
In herbs, plants, stones, and their true qualities:
For nought so vile that on the Earth doth live
But to the earth some special good doth give,
Nor aught so good, but, strained from that fair use,
Revolts from true birth, stumbling on abuse.
Virtue itself turns vice, being misapplied,
And vice sometimes by action dignified.
Within the infant rind of this small flower
Poison hath residence, and medicine power:
For this being smelt, with that part cheers each part;
Being tasted, slays all senses with the heart.—*Romeo and Juliet* II 3

804 *Queen* Whiles yet the dews on ground gather those flowers
Make haste—who has the note of them?—*Cymbeline* IV 2

805 *Third Witch* Root of hemlock digg'd i' the dark.—*Macbeth* IV 1

806 *Lucianus* Thou mixture rank, of midnight weeds collected
With Hecate's ban thrice blasted, thrice infected,
Thy natural magic and dire property
On wholesome life usurp immediately.—*Hamlet* III 2

Hippocratic Facies

807 *Clarence* His eyes are hollow, and he talks much.—*Henry VI Pt. III* V 5

808 *Hostess* A made a finer end, and went away an it had been any christom child. A parted even just between twelve and one, even at the turning o' the tide: for after I saw him fumble with the sheets and plucking at the flowers and smile

upon his fingers ends I knew there was but one way—for his nose was as sharp as a pen and a babbled of green fields

So a bade me lay more clothes on his feet I put my hand into the bed and felt them and they were as cold as any stone then I felt to his knees and so upward and upward and all was as cold as any stone A did in some sort indeed handle women but then he was rheumatic and talked of the whore of Babylon

Boy Do you remember a saw a flea stick upon Bardolph's nose and a said it was a black soul burning in hell fire—*Henry V* ii 3

(Chrisom-child was one dying within one month of birth The chrisom was the christening cloth which in the case of a chrisom-child was used as the shroud It was a popular belief that death took place at the turning of the tide.

Rheumatic in this quotation is a Malapropism The hostess presumably meant delirious or lunatic This description of the death of Falstaff has not the clinical ring necessary to guess at a diagnosis In a sense Shakespeare breaks his promise made in the Epilogue to Henry IV Part 2 in which he at least suggests that Falstaff will appear in the next play In fact Falstaff never does appear in Henry V but dies off stage

One word more I beseech you If you be not too much cloyed with fat meat our humble author will continue the story with Sir John in it and make you merry with fair Catherine of France where for anything I know Falstaff shall die of a sweat unless already a be killed with your hard opinions

Epilogue to Henry IV Pt 2 Thus authoritatively Falstaff had to die of a febrile illness although he was suffering otherwise from gout and syphilis)

809 *Patience* Do you note
How much her Grace is altered on the sudden?
How long her face is drawn? how pale she looks,
And of an earthy colour? Mark her eyes

Griffith She's going wench pray pray—*Henry VIII* iv 2

Hoarseness

810 *Lady* The raven himself is hoarse
Macbeth That croaks the fatal entry of Duncan—*Macbeth* i 5

(There are numerous references to the raven as a bird of ill-omen)

Horror, Effect of *See also* Fear

811 *Marcus* with this dear sight
Struck pale and bloodless and thy brother I
Even like a stony image cold and numb—*Titus Andronicus* iii 1

Hospitals

Prior to the dissolution of the monasteries by Henry VIII there were some 500 English hospitals or charitable foundations the vast majority of which only catered for a few individuals either indigent, sick or leprous They were however more of the nature of almshouses under the medical supervision of the clergy So called lepers were admitted with other patients, no strict segregation being the custom

812 *Canterbury* And to relief of lazars and weak age
Of indigent faint souls past corporal toil
A hundred almshouses right well supplied—*Henry V* i 1

813 *Pistol* No to the spital go
And from the powdering tub of infamy
Fetch forth the lazar kite of Cressid's kind
Doll Tearsheet she by name—*Henry V* ii 3

814 *King* [illegible] hundred poor I have in yearly pay. *Henry V.* IV. 1
815 *Pistol* Nor have I that my Nell is dead i' the spital
Of malady of France.—*Henry V.* IV. 9
(malady of France = syphilis)
816 *Timon* She whom the spital house and ulcerous sores
Would cast the gorge at, this embalms and spices
To th' April day again.—*Timon of Athens*, IV. 3

Humours

817 *Lady* Come to my woman's breasts
Macbeth And take my milk for gall.—*Macbeth*, I. 5
818 *Emilia* Is he not jealous?
Desdemona Who, he? I think the Sun where he was born
Drew all such humours from him.—*Othello*, III. 4
819 *Portia* [illegible] at supper
You suddenly arose, and walk'd about
Musing and sighing, with your arms across
You stared upon me with ungentle looks
I urged you further; then you scratched your head
And too impatiently stamp'd with your foot
Yet I insisted, yet you answer'd not
But with an angry wafture of your hand
Gave sign for me to leave you. So I did
Fearing to strengthen that impatience
Which seem'd too much enkindled, and withal
Hoping it was but an effect of humour
Which sometimes hath his hour with every man
It will not let you eat, nor talk, nor sleep
And could it work so much upon your shape
As it hath much prevail'd on your condition
I should not know you, Brutus. Dear my lord
Make me acquainted with your cause of grief.—*Julius Cæsar*, II. 1

(Brutus is worried by his wife's fussing, and insistence [illegible] to formulate his stand against Cæsar. A reason for his keeping silent about the plot is to be found in a later remark of Portia's. How bad it is for women to keep a secret!)

820 *Hamlet* [illegible] the humorous man shall end his part in
peace, the Clown shall make those laugh whose lungs
are tickle o' th' sear, and the lady shall say her
mind freely, or the blank-verse shall halt for't.—*Hamlet*, II. 2

(humourous subject to humours, fretful, wayward. A similar idea is given in The Tempest: "I did it to minister occasion to these gentlemen, who are of such sensible and nimble lungs, that they always used to laugh at nothing.")

Tickle o' the sear means a light setting of the trigger of a gun. It was a current usage, thus in Howard's Defensative against the Poison of supposed Prophecies, 1620:

"Discovering the moods and humors of the vulgar sort to be so loose and tickle of the seare."

Gerard (5) utters a warning, to lovers of the Artichoke: "for the Artichoke containeth plenty of cholericke juyce and hath no hard substance insomuch as of this is ingendred melancholy juyce and of that is thin and cholericke blood as Galen teacheth in his booke of the facilities of nourishments."

Hunger

821 *Imogen* [illegible] now I think on thee
My hunger's gone, but even before I was
At point to sink for food.—*Cymbeline*, III, 6

822 *Imogen* almost spent with hunger.—*Cymbeline* iii 6

HUNGER STRIKE

823 *Cleopatra* Sir, I will eat no meat, I'll not drink, sir;
If idle talk will once be necessary,
I'll not sleep neither: this mortal house I'll ruin,
Do Cæsar what he can.—*Antony and Cleopatra* v 2

HYPNOSIS

824 *Prospero* Thou art inclined to sleep; 'tis a good dulness,
And give it way: I know thou canst not choose.
(Miranda sleeps).—*The Tempest* i 2

825 *Prospero* Come on; obey:
Thy nerves are in their infancy again
And have no vigour in them.—*The Tempest* i 2

(Ferdinand [illegible] draws his sword but is charmed [illegible] Hypnosis was not known [illegible] the effect [illegible] pure hypnosis [illegible] to these effects [illegible] the next quotation.)

826 *Prospero* The charm dissolves apace;
And as the morning steals upon the night,
Melting the darkness, so their rising senses
Begin to chase the ignorant fumes that mantle
Their clearer reason.—*The Tempest* v 1

(The name of Mesmer, 1734-1815, [illegible] hypnosis or Mesmerism. At first his effects [illegible] by magnets [illegible] [illegible] James Braid [illegible] Wall [illegible] 1890.)

HYPNOTICS

827 *Lady Macbeth* the surfeited grooms
Do mock their charge with snores: I have drugg'd
their possets,
That death and nature do contend about them,
Whether they live or die.—*Macbeth* ii 2

828 *Iago* Not poppy, nor mandragora,
Nor all the drowsy syrups of the world,
Shall ever medicine thee to that sweet sleep
Which thou owedst yesterday.—*Othello* iii 3

829 *Archidamus* We will give you sleepy drinks, that your senses, unintelligent of our insufficience, may, though they cannot praise us, as little accuse us.—*Winter's Tale* i 1

830 *Friar Laurence* Then I gave her, so tutor'd by my art,
A sleeping potion; which so took effect
As I intended, for it wrought on her
The form of death.—*Romeo and Juliet* v 3

831 C[illegible] to drink mandragora
[illegible] Wo[illegible]dum?
[illegible] sleep out this g[illegible]
[illegible] *Anton.* [illegible]

832 *S[illegible]* [illegible] kill as doth the [illegible]

[illegible]

HYDROPHOBIA

833 *Imag[illegible]* [illegible] not yet [illegible]
B[illegible] citizen [illegible]
[illegible] sick [illegible]

HYSTERIA [illegible] FITS

An old expression for hysteria was the rising of the mother. Thus Hall's Century of Cures. The fits of the mother often rise [illegible] of which she was not delivered till she shed tears and [illegible] There is another disease which people term the Rising of the Lights and I am of the opinion that it is the same with what they call Hysterica passio or The mother because it seizeth upon women (though men too sometimes have somewhat like it) and it is evident enough since Dr Highmore a very industrious learned man hath sufficiently shewn that the lungs are the part principally affected with that which hitherto hath been called a Fit of the mother."—Medela Medicinae a Plea by Dr Nedham 1665 [3]

"If she have a little helpe of the mother epilepsie or cramp to teach her roll her eyes, wire her mouth gnash her teeth starte with her body hold her armes and handes stiffe make antike faces gunne mow and mop like an ape then no doubt the young girle is owle blasted, and possessed —Harsnet quoted by Hudson

Shakespeare's Son in law Dr John Hall in his Select Observations on English Bodies or Cures Empirical and Historical Performed on very eminent

Persons in Desperate Disorders quotes the case of his own wife, i e Shakespeare's Daughter Wife was troubled with the Scurvy accompanied with Pain of the Loins Wind Cardiac Passion Laziness Corruption of the Gums Stinking Breath Melancholy difficulty of breathing fear of the Mother, binding of the Belly, and torment there and all of a long continuance, with restlessness and weakness

A description of Hysterics written by Thomas Graham, M D, 1844, explains the term Rising of the Lights ' The hysteric fit often takes place without any previous warning though generally there are some precursive signs as yawning stretching dejection of spirits, anxiety of mind sickness at the stomach palpitation of the heart, and sudden bursts of tears without any assignable cause The paroxysm soon succeeds with a coldness and shivering over the whole body and frequently with an acute pain on the left side and a sense of distension giving the idea of a ball or globe rolling about in the abdomen and gradually advancing upwards till it gets into the stomach, thence removing to the throat, it occasions the sensation of an extraneous body lodged there which is called globus hystericus '

834 *Lear* O how this mother swells up toward my heart
Hysterica passio down thou climbing sorrow
Thy element s below — *King Lear* ii 4

835 *Edgar* Stiberdigibet of mopping and mowing who since
possesses chambermaids and waiting women —*King Lear* iv 1
(mopping and mowing chattering or mocking and making faces or grimacing)

Idiocy

836 *Ross* Alas poor country
Almost afraid to know itself It cannot
Be called our mother but our grave where nothing
But who knows nothing is once seen to smile —*Macbeth* iv 3
(refers to the vacant stare from to be seen on the face Idiots the idiotic smile —*see* 504)

Infection *See also* Pestilence Syphilis

837 *Macbeth* Saw you the Weird Sisters ?

Infected be the air whereon they ride —*Macbeth* ii 1

838 *Othello* Had it pleased Heaven
To try me with affliction had He rained
All kinds of sores and shames on my bare head —*Othello* iv 2

839 *Duke* O when mine eyes did see Olivia first
Methought she purged the air of pestilence! —*Twelfth Night* i 1

840 *Sir Toby* A contagious breath
Sir Andrew Very sweet and contagious i faith —*Twelfth Night* ii 3

841 *Sir Toby* His very genius hath taken the infection of the device man
Maria Nay pursue him now let the device take air
and taint —*Twelfth Night* iii 4

842 *Viola* I hate ingratitude more in a man
Than lying vainness babbling drunkenness
Or any taint of vice whose strong corruption
Inhabits our frail blood —*Twelfth Night* iii 5

843 *Casca* [illegible] the rabblement shouted and clap[illegible] in nis and threw up their sweaty night caps [illegible] al of stinking breath because Cesar refu[illegible] h I almost choked Cesar for he swoone [illegible] and I for mine own part I durst not [illegible] ing my lips and receiving the [illegible] *J* [illegible]

844 [illegible] I ass on I see is catching for mine [illegible]
Seeing those beads of sorrow stand in thine
Begin to water—*Julius Cesar* [illegible]

845 *Lucile* And in the morn and liq[illegible] I flesh of y[illegible] th
Contagious blastments are most imi[illegible] *H*[illegible]

(Hippocrates comments on the fact that although [illegible] than the young yet when they do the [illegible] *H*[illegible]

846 *Polonius* Will you walk out of the air my L[illegible] *H*[illegible]

847 *Hamlet* [illegible] the air [illegible] ishy it appears n other
thing, to me than a foul and pestilent con[illegible]
of vapours—*Hamlet* [illegible]

848 *Hamlet* Tis now the very witching time of night
When churchyards yawn and Hell itself breathes out [illegible]
Contagion to this world now could I drink hot blood
And do such bitter business as the day
Would quake to look on—*Hamlet* [illegible]

(The quotation refers not to the contagion [illegible] liberation of evilly disposed spirits and their influe[illegible]

849 *Lear* Strike her young bones
You taking airs with lameness!
Cornwall Fie Sir fie!
Lear You nimble lightnings dart your blinding flame
Into her scornful eyes! Infect her beauty
You fen sucked fogs drawn by the powerful sun
To fall and blast her pride!—*King Lear* [illegible]

850 *Lear* Now all the plagues that in the pendulous air
Hang fated o'er men's faults light [illegible] *J* [illegible]

851 *Timon* O blessed breeding Sun draw from the earth
Rotten humidity! below thy sister's orb
Infect the air—*Timon of Ath* [illegible]

852. *Timon* I d beat thee but I should infect my hands
Apemantus I wish my tongue could rot them off
Timon Away thou issue of a mangy dog!
Choler does kill me that thou art alive
I swoon to see thee
Apemantus Would thou wouldst burst—*Timon of Ath* [illegible]

853 *Timon* I thank them and would send them back the plague
Could I but catch it for them *Ath* [illegible]

854 *Gaunt* This fortress built by Nature for herself
Against infection and the hand of war [illegible]

(Gaunt is referring to the protection [illegible] quarantine precautions can be taken [illegible] from the Italian word for forty the term, th[illegible] insisted on)

855 *Clotten* The south fog rot him!—*Cymbeline* [illegible]

856 [illegible] [illegible] iron [illegible]

857 *[illegible]* [illegible]

858 *Bru[illegible]* [illegible]

859 [illegible]

860 *Sands* [illegible]

861 *[illegible]* [illegible]

862 *[illegible]* [illegible]

Henry VIII [illegible]

863 *[illegible]* [illegible]

864 *[illegible]* [illegible]

865 *[illegible]* [illegible]

[illegible]

[illegible]

867 *[illegible]* [illegible] Thy cun is terrible [illegible]
[illegible] men were nu living men [illegible]
[illegible] with star —*Much Ado About Nothing* [illegible]

868 *[illegible]* [illegible] —*Much Ado About Nothing* [illegible]

869 *[illegible]* [illegible] *A Midsummer Night's Dream* [illegible]

870 *[illegible]* [illegible] to us in vain
[illegible] Dip from the [illegible]
[illegible]
[illegible] spirits we see
[illegible] —*Midsummer Night's Dream* [illegible]

871 *Cleopatra* [illegible] upon thee [illegible]

872 *[illegible]* [illegible] Plunge in an [illegible]
[illegible] *Antony and Cleopatra* [illegible]

873 *Miranda* All the contents of this fair light on you
[illegible] Rocks and plains
[illegible] you [illegible] ye [illegible] ful
[illegible] and one another
[illegible] —*Cymbeline* [illegible]

874 *Brutus* [illegible] this house and pluck his throne
[illegible] being of such a nature
[illegible] further —*Coriolanus* [illegible]

875 *Adriana* My [illegible] is mingled with the grame of lust
[illegible] two be one and thou play false
[illegible] against the poison of thy flesh
Be [illegible] infected by thy contagion [illegible]

876 *Rape of Lucrece* Or if the [illegible] the sun to chide
[illegible] thought yet ere he go to bed
[illegible] heads shut his golden head
We [illegible] ravish the morning [illegible]
[illegible] rush-bed unwholesome breath [illegible]
[illegible] —*Rape of Lucrece* [illegible]

877 *Arcite* [illegible] kill the [illegible] this [illegible]

878 *Venus and Adonis* [illegible] virtue still [illegible]
[illegible] the [illegible] the [illegible]

879 *Caliban* As [illegible] thunder [illegible]
With [illegible] feathered [illegible] much less [illegible]
Drip [illegible] south west blow [illegible]
And blister you all over —*The Tempest* [illegible]

880 *Caliban* All the [illegible] from the Sun [illegible]
[illegible] his [illegible] pinch till [illegible]
By [illegible] —*The Tempest* [illegible]

881 *Leontes* The [illegible]
[illegible] all infection [illegible] in which [illegible]
Do [illegible] —*The Winter's Tale* [illegible]

882 *Leontes* [illegible] from [illegible]
[illegible] planet [illegible]
Where [illegible] predominant [illegible] think
From east west north [illegible] —*The Winter's Tale* [illegible]

883 *Camillo* There is a sickness
Which puts some of us in distemper, but
I cannot name the disease; and it is caught
Of you that yet are well.—*Winter's Tale*, i. 2.
[illegible]

884 *Polixenes* How! caught of me!
Make me not sighted like the basilisk:
I have look'd on thousands, who have sped the better
By my regard, but kill'd none so.—*Winter's Tale*, i. 2.

885 *Polixenes* A sickness caught of me, and yet I well!—*Winter's Tale*, i. 2.

886 *Polixenes* O, then my best blood turn
To an infected jelly,
Where I arrive, and my approach be shunn'd,
Nay, hated too, worse than the great'st infection
That e'er was heard or read!—*Winter's Tale*, i. 2.

INFERIORITY COMPLEX

887 *Cassius* Such men as he be never at heart's ease
Whiles they behold a greater than themselves,
And therefore are they very dangerous.—*Julius Cæsar*, i. 2.

INHERITED CHARACTERISTICS

888 *Macbeth* Bring forth men-children only;
For thy undaunted mettle should compose
Nothing but males.—*Macbeth*, i. 7.

889 *Hamlet* Get thee to a nunnery: why wouldst thou be a breeder
of sinners?—*Hamlet*, iii. 1.

890 *Edmund* bastardy? base, base?
Who, in the lusty stealth of nature, take
More composition and fierce quality
Than doth, within a dull, stale, tired bed,
Go to the creating a whole tribe of fops,
Got 'tween asleep and wake?—*King Lear*, i. 2.

891 *Timon* These old fellows
Have their ingratitude in them hereditary:
Their blood is caked, 'tis cold, it seldom flows;
'Tis lack of kindly warmth they are not kind.—*Timon of Athens*, ii. 2.

892 *Paulina* Behold, my lords,
Although the print be little, the whole matter
And copy of the father, eye, nose, lip,
The trick of 's frown, his forehead, nay, the valleys,
The pretty dimples of his chin and cheek, his smiles,
The very mould and frame of hand, nail, finger.—*Winter's Tale*, ii. 3.

893 *Perdita* the fairest flowers o' the season
Are our carnations and streak'd gillyvors,
Which some call nature's bastards: of that kind
Our rustic garden's barren; and I care not
To get slips of them.

Polixenes Wherefore, gentle maiden,
Do you neglect them?

Perdita For I have heard it said
There is an art which, in their piedness shares
With great creating nature.
Polixenes Say, there be
Yet nature is made better by no mean
But nature makes that mean: so over that art
Which you say adds to Nature, is an art
That nature makes. You see, sweet maid, we marry
A gentler scion to the wildest stock
And make conceive a bark of baser kind
By bud of nobler race. This is an art
Which does mend nature,—change it rather; but
The art itself is nature.—*Winter's Tale*, IV. 3.

894 *Prospero* Good mounts have borne bad sons.—*Tempest*, I. 2.

895 *Beatrice* Cowards father cowards, and base things sire base.—*Cymbeline*, III. 5.

896 *Leontes* Your mother was most true to wedlock, Prince;
For she did print your royal father off
Conceiving you.—*Winter's Tale*, V. 1.

897 *Lucius* Do not learn her wrath;—she taught it thee;
The milk thou suck'dst from her did turn to marble;
Even at thy teat thou hadst thy tyranny.—
Yet every mother breeds sons like.—*Titus Andronicus*, II. 3.

898 *2nd Goth* But where the bell and crow are both milk white,
They never do beget a coal-black calf.—*Titus Andronicus*, II. 1.

(The facts of Mendelism were well recognized as the generations shows. The theory of inherited characteristics was not elucidated until Greg, in Johann Mendel, 1822–1884, investigated the subject and enunciate [illegible] Mendel was concerned with the transmission of physical characters. [illegible] often arises as to whether mental attributes are also transmissible from parents to children, whether such are the result of environment, training, [illegible] apparent that Shakespeare accepted the view that temperament [illegible] inherited qualities.)

Inoculation

899 *Hamlet* For virtue cannot so inoculate our old stock
but we shall relish of it.—*Hamlet*, III. 1.

(Inoculation in the medical sense was unknown to Shakespeare. The usage here is in the sense of impressing itself upon.)

Insomnia

900 *Brutus* Since Cassius first did whet me against Cæsar
I have not slept.—*Julius Cæsar*, II. 1.

901 *Doctor* Not so sick, my lord
As she is troubled with thick-coming fancies
That keep her from her rest.—*Macbeth*, V. 3.

902 *Iachimo* Wearinesse
Can snore upon the flint, when resty sloth
Finds the down pillow hard.—*Cymbeline*, III. 6.

903 *Pisanio* Since I have received command to do this business
I have not slept one wink.
Imogen Do't, and to bed then.
Pisanio I'll wake mine eyeballs blind first.—*Cymbeline*, III. 4.

[illegible] [illegible]tch in every old man's eye,
[illegible] [illegible]dges, sleep will never lie;
[illegible] [illegible]ed youth with unstuff'd brain
[illegible] [illegible]mbs, there golden sleep doth reign:
[illegible] [illegible]ness doth me assure
[illegible] [illegible]d by some distemperature.—*Romeo and Juliet* ii 3

[illegible] [illegible] sleep from my enthralled eyes
[illegible] [illegible]chers of mine own heart's sorrow.
Two Gentlemen of Verona ii 4

[illegible] [illegible] fantastic eyes, blood from my cheeks. [illegible]

[illegible] [illegible] him sleep. 'Tis such as you,—
[illegible] shadows by him and do sigh
At each his needless heavings,—such as you
Nourish the cause of his awaking: I
Do come with words as medicinal as true,
Honest as either, to purge him of that humour
That presses him from sleep.—*Winter's Tale* ii 3

[illegible] Weary with toil, I haste me to my bed,
The dear repose for limbs with travel tired;
But then begins a journey in my head,
To work my mind, when body's work's expired:
For then my thoughts, from far where I abide,
Intend a zealous pilgrimage to thee,
And keep my drooping eyelids open wide,
Looking on darkness which the blind do see:
Save that my soul's imaginary sight
Presents thy shadow to my sightless view,
Which, like a jewel hung in ghastly night,
Makes black night beauteous and her old face new.
Lo! thus, by day my limbs, by night my mind,
For thee and for myself no quiet find.
How can I then return in happy plight,
That am debarr'd the benefit of rest?
When day's oppression is not eased by night,
But day by night, and night by day, oppress'd?

909 *Sonnet 28* And night doth nightly make grief's strength seem stronger.

910 *Sonnet 61* It is my love that keeps mine eye awake;
Mine own true love that doth my rest defeat,
To play the watchman ever for thy sake.

911 *Fool* The man that makes his toe
What he his heart should make
Shall of a corn cry woe,
And turn his sleep to wake.—*King Lear* iii 2.

912 *Iago* And, being troubled with a raging tooth,
I could not sleep.—*Othello* iii 3

ITCH (*See also* Scabies and Parasites)

913 *Timon* Itches, blains,
Sow all the Athenian bosoms; and their crop
Be general leprosy! breath infect breath,
That their society, as their friendship, may
Be merely poison!—*Timon of Athens* iv 1

914 *Borachio* Mass, and my elbow itched; I thought there would a scab follow.—*Much Ado About Nothing* III 3

915 *Brutus* And let me tell you, Cassius, you yourself
Are much condemn'd to have an itching palm,
To sell and mart your offices for gold
To undeservers.—*Julius Cæsar* IV 3

916 *Ajax* My fingers itch.
Thersites I would thou didst itch from head to foot and I had the scratching of thee; I would make thee the loathsomest scab in Greece.—*Coriolanus* I 1

917 *Bottom* Scratch my head, Peas-blossom. … I must to the barber's mounsieur; for methinks I am marvellous hairy about the face; and I am such a tender ass, if my hair do but tickle me I must scratch.—*Midsummer Night's Dream* IV 1

[*To be continued*]

SKIN DISEASES IN THE ROYAL NAVY

BY

Surgeon Lieutenant-Commander R. SCUTT, R.N.

EVERY dermatologist is accustomed to the age-old banter regarding the advantage of his speciality. His patients never die, never call him out at night and, it appears, are never cured. We in the Services cannot argue over the first two premises. Only a few rarities presenting with skin lesions, progress to a fatal conclusion. Acute disseminated lupus erythematosus, pemphigus and the reticuloses, spring to mind. I have not seen any of these conditions in naval personnel during the past two years. Dermatological emergencies do not occur. After all, we have not chosen our speciality for nothing! It is the third suggestion that must be questioned. Is there any truth in it?

If we look at the advertisements in the underground trains, we know that *Rubsin*[1] is specific for all types of skin troubles. Our charlady will certainly vouch to its efficacy. It would surely be unfair to suggest that some of the "pimples, spots, rashes, etc." that melt away after three applications might have disappeared spontaneously? Nevertheless we have a sneaking suspicion that some skin diseases do run a definite course and are normally self-limiting. I say "normally", but what of those that do not respond to the magic of *Rubsin*?[1] The answer is simple, for *Plasteron*[1] is always at hand. And if after a further period the rash is perhaps a little more extensive, then *Germofax*[1] will surely provide the answer. By the time that chronic eczematization has been well and truly established the sufferer has only to approach the sympathetic practitioner, who is always willing to oblige with a supply of Whitfield's ointment or penicillin cream. The nuclear chain reaction of sensitization processes having been set well in motion, it is the poor dermatologist that reaps the full benefit. Little wonder that his patients sometimes take so long to cure.

[1] Any similarity to recognised proprietary remedies is entirely coincidental.

It is impossible to overstress the dangers of converting a comparatively harmless and probably self limiting skin lesion into something that may well persist indefinitely or tend to recur in future years and result in considerable discomfort and lowering of working efficiency The principal factors responsible for such a change are as follows

Rubbing and scratching—From the onset a little discussion with the patient concerning the effect that such action is likely to have reassurance as to the prognosis, and the administration of simple sedative remedies both local and systemic will often permit a rapid cure

The Use of Soap and Water and Other Detergents—Generally speaking the damaged skin will not tolerate the use of deterrasants of any kind It is surprising how frequently ratings with eczematous eruptions of the hands are allowed to continue doing their own dhobeying or to carry on with dirty jobs necessitating harsh cleansing agents

The Wearing of Irritating Clothing—As far as is practicable wool and serge should not be allowed to come into direct contact with the damaged skin In a hot climate the avoidance of socks and the wearing of open sandals will alleviate the discomfort of hyperidrosis of the feet and help to prevent the development of fungus infections and their sequelæ

The Indiscriminate Local Use of Sensitizing Medicants—The well recognized trouble makers are penicillin, the sulphonamides acriflavine the anæsthetic alkaloids and the antihistamine drugs To this list should be added all the fungicides of which full-strength Whitfield's ointment and the organic mercurials are probably the worst offenders Would it be too much to expect medical officers to forget that such remedies ever existed?

The Use of Unsuitable Ointment Bases—It requires a considerable amount of experience to appreciate what is likely to be the most suitable type of application in any individual case One fact however stands out and that is that the *acutely inflamed skin will not tolerate grease* When one appreciates that the skin is much more irritable when hot, then it is obvious that the greatest benefit is likely to be obtained by the use of cooling lotions and liniments If there is exudation grease will only result in occlusion and aggravation while wet dressings or sprays will rapidly produce relief, This applies particularly to the treatment of the acute infective dermatoses such as impetigo

Improper Methods of Applying Local Treatment—Damage is readily caused by rubbing medicaments into the inflamed skin (*vide infra* remarks on local application)

The following notes have been compiled in the hope that all medical officers will be able to deal adequately with the common minor skin ailments, and will not therefore need to refer them later in an almost hopeless state to the unfortunate specialist Only seven conditions have been included These represent over 90 per cent of the skin lesions seen in the Royal Navy An attempt has been made to indicate simple lines of treatment which may be carried out

in [illegible] sick bays. It is [illegible] common sense dermatology and does not [illegible] any specialized knowledge of the subject beyond that which may be gleaned from the perusal of any small textbook on skin diseases e g "Introduction to Dermatology" by G H Percival (Livingstone) If I am dogmatic over treatment this has been done deliberately in order not to dazzle the practitioner with a mass of alternative procedures If you know that a simple routine works and does not cause trouble keep to it This article is intended for those who are not so confident in their ability to cope

Tinea

In the 1951 Year Book of Dermatology and Syphilology a section has been devoted to "Common Errors of Management" where it points out the common fallacy of regarding all lesions on the feet and all circinate eruptions elsewhere as being due to tinea The common types are

Tinea Interdigitale — Toe rot Maceration of the toe-clefts (generally 4th/5th) is the commonest type and not likely to cause much trouble in temperate climates Acute exacerbations with secondary eczematization may occur in hot weather with spread on to the soles very rarely becoming generalized

Tinea Cruris — "Dhoby itch" Circinate eruption over the inner aspects of the thighs clearing in the centre and with an active spreading margin

Differential Diagnosis —There are many dermatosis often diagnosed as tinea of which the more common are as follows

Primary idiopathic vesicular eruptions of the feet and hands (cheiropompholyx) These are acute eruptions generally affecting both feet or hands spontaneously in a way that is never seen in an untreated tinea Occasionally an acutely inflamed tinea pedis may result in a secondary "id" reaction on the palms but a primary tinea of the hands is a very rare disease in the Royal Navy

Contact dermatitis (frictional) may occur on the *dorsa* of the feet, especially in engine room ratings Tinea is very seldom seen in this area except after the use of strong fungicides e g Whitfield s ointment

Intertrigo of the Groins Here there is no clearing centre nor sharply defined margin A drying cream or shake lotion or painting with 1 per cent gentian violet daily for a few days is indicated

Alopecia Areata Bald patches in the scalp with non inflamed skin (Tinea capitis is so rare in adults that it need hardly be considered)

Circinate eruptions occurring in Service patients on the trunk and limbs are very seldom due to tinea circinata except in the tropics The diagnosis is much more likely to be circinate seborrhoeic dermatitis psoriasis pityriasis rosea or urticaria

It is most important to establish an early diagnosis preferably by microscopical examination of scrapings before the clinical features are altered by treatment. The reason for this is that most fungicidal remedies tend to aggravate

or cause sensitization and eczematization if used inappropriately On the other hand a true tinea is most unlikely to be cured by treatment other than fungicides although aggravation can generally be avoided by the use of simple bland, but non greasy applications

Treatment—Keep the skin cool It is therefore, wiser to avoid the use of greasy ointments in the treatment of tinea They are always poorly tolerated in flexural areas (e g toe-clefts and groins) The intolerance is greatly increased if secondary impetiginization or eczematization has occurred, or if the treatment is being given under tropical conditions This probably accounts for some of the severe reactions so often seen following the use of Whitfield's ointment and the proprietary organic mercurial ointments In other cases there may, of course, be a true allergic contact dermatitis caused by active ingredients

A suggested routine is (1) The uncomplicated case of tinea of the toe clefts will generally respond to the application twice daily of *Castellani's paint*, followed by a simple dusting powder This should be used for about seven to ten days If response is not dramatic the diagnosis is probably wrong Do not switch to other fungicides (2) In the presence of acute eczematization or secondary infection, baths and wet dressings of pot permang 1 in 4 000 are generally advisable and the patient put on the sick list This treatment should be discontinued as soon as the acute phase is over the infection controlled, and the skin dry More active therapy may then be given If response is poor the case should be referred to hospital (3) An undecylenic acid preparation e g tineafax is suitable for the uncomplicated case of tinea cruris (in order to avoid staining of underclothes by the use of dyes)

Prophylaxis—At the onset socks or underwear should be soaked in 1 in 20 lysol and the insides of the shoes swabbed out with the same solution and allowed to dry in a warm place overnight Socks and shoes should afterwards be liberally dusted with undecylenate dusting powder for at least a month after clinical cure The complete avoidance of footwear at sea in the tropics is strongly recommended

Perso foot powder (non fungicidal) is most effective in controlling hyperidrosis so often a forerunner of tinea pedis

The Eczema Dermatitis Group

This covers a wide field and is probably the biggest and often the most controversial problem in dermatology It is important to decide as early as possible whether the primary condition is of endogenous (constitutional) infective or contact origin The secondary effect of self trauma (rubbing and scratching) the use of soap and water friction from clothing irritation from sweat or unsuitable medicaments must then be considered (*vide supra*)

Treatment—Always remember that the treatment of eczema is essentially protective and symptomatic but not specifically curative

The use of unsuitable agents may result in sensitization with secondary

spread to other areas of the body and a tendency to repeated relapses in future years

The principles of therapy are as follows

Resting the inflamed part is a fundamental medical principle which is often overlooked as far as the skin is concerned This generally means light duty away from all irritants or if the feet or legs are involved rest in bed Light cool clothing should be worn (serge and jersey are likely to irritate) If the hands are affected contact with soap and water etc (e g dishwashing) must be prevented

Irritation should be relieved as soon as possible Oral or intramuscular antihistamines are often effective provided they are given in a high enough dosage A saline purge or alkaline diuretic mixture will help to remove fluid from the skin and thereby relieve tension

Local applications (*a*) A weeping surface should generally be treated with wet dressings (*b*) The acute (*but intact*) eczematous skin should be treated with bland cooling lotions liniments or creams (*c*) Once the acute stage is past pastes are generally most suitable These should be applied on strips of calico or smooth cotton material and kept in situ with a light bandage (*d*) Occlusive bandages of the Viscopaste or Coltapaste type are often most effective in preventing further damage from rubbing and scratching (*e*) It may be necessary to complete the cure with tar applications or a course of superficial X ray therapy

No application should be rubbed into the eczematous skin

Under tropical conditions, many bland and normally harmless applications especially if greasy will often cause increased irritation and therefore, defeat the object for which they are intended Rest in bed with light coverings a cradle over the affected part and no local treatment whatsoever will often produce a dramatic result provided the skin can be kept cool

Reference is recommended to an excellent article by Ingram (1953)

Impetigo

A self limiting disease in itself but a secondary dermatitis may easily be produced by topical therapy

Principles of Treatment—It is one of the few contagious dermatoses Therefore remove the patient from crowded quarters and treat in the sick bay

Any greasy ointment applied to an acute exuding surface will tend to aggravate in a high proportion of cases This applies to such well-known "remedies" as ung hyd ammon dil boracic ointment zinc and castor oil ointment etc

Most of the recognized bactericidal agents especially the sulphonamides and penicillin may produce allergic reactions, if locally applied This also applies to some of the dyes e g acriflavine

Removal of crusts tends to open up new channels of infection Once the

acute phase is past these will dry up and fall off spontaneously or with the gentle help of a pair of forceps

In a severe case systemic antibiotics are indicated

Suggested Routine

(1) A three to five day course of Sulphathiad or Gantrisin

(2) Three hourly spraying with Lotio d Albom containing 25 per cent spirit (i e a kind of 'no-touch' technique)

(3) Removal of crusts only when quite dry and almost falling off This generally occurs after forty eight to seventy two hours

(4) Finish off with the gentle application twice daily of 1 per cent ichthyol in zinc cream

Psoriasis

Acute guttate psoriasis (generalized) Often follows an acute infection in the upper respiratory tract A self limiting disease but best treated in hospital ashore

Chronic psoriasis of knees and elbows May or may not respond to treatment by removal of scales with soap and water and injection of Ung Dithranol Forte B P Generally a harmless entity and may often be disregarded

Chronic relapsing psoriasis involving other sites sometimes becoming generalized A difficult problem on the lower deck in view of crowded living conditions which make concealment impossible There is a natural tendency for sufferers to avoid the treatment which would help them most namely frequent baths and exposure to sunlight and to develop a 'leper complex' Local treatment with ointment is generally ineffective but the condition often clears up temporarily in a warm climate

N B —Psoriasis is one of the few dermatological conditions where soap and water is beneficial and ointments should be rubbed into the skin

Acne

A very common condition in the Service Although it is true that the disease will clear up spontaneously as soon as hormonal balance has been reached a policy of inactive expectancy is liable to produce dissatisfaction in the patient and in some cases the 'leper complex'

The two points which should be clearly understood are

(1) The disease is primarily due to overactivity of the sebaceous glands producing the secretion which blocks up the follicles and results in the formation of comedones Therefore treatment should be directed towards unblocking the follicles and reducing sebaceous activity Any greasy application is clearly contra-indicated

(2) Bacterial infection plays a very small part in acne Even the severe pustular lesions and the deep abscesses seen in acne conglobata are seldom

due to pyogenic organisms but are more often sterile foreign body reactions Bactericidal remedies are therefore ineffective

Treatment—The frequent use of soap and hot water and the manual expression of comedones require assistance and should therefore be done in the sick bay, or by another patient who understands the routine Hot flannel compresses are helpful in severe cases

The above should be immediately followed by the use of a sulphur lotion e g lotio pot sulph cum zinco N F which should be massaged firmly into the skin with the tips of the fingers The percentage of active ingredients should be gradually increased according to response Excessive dryness of the skin is an indication to stop the treatment temporarily

Ultra violet light (natural or artificial) is generally very beneficial but each course should last for at least two months to be effective

Œstrogens are worth a trial in severe cases Suggested dosage is 2 mg daily for three weeks starting on the first day of the month and repeating for three consecutive months Breast swelling or tenderness is an indication to discontinue treatment temporarily

It is considered most important that the acne patient should understand something about the condition from which he is suffering The following is a copy of the typed instructions given to every patient at Portsmouth

(1) Acne is a disease of adolescence That is to say it begins between the ages of 14 and 18 That is the period when the sex glands are sorting themselves out and the effect on the body is that the *skin becomes very greasy* As a result, some of the pores may become blocked with little grease plugs which show on the skin as blackheads These with pimples yellow heads and other rashes together make up the picture of acne In spite of its rather unpleasant appearance there is nothing infectious or contagious about the condition so your messmates need not regard you as a leper It is more likely that they will have had it themselves in some form

(2) Although acne starts between 14 and 18 the course of the disease varies from case to case In the majority of people it clears up spontaneously In some however it persists into the 20s and if not controlled may cause considerable embarrassment and disfigurement For this reason it is important that treatment should be given early and persisted with *The final cure may take years but it is rare for the disease to persist over the age of 25*

(3) What you can do to help get your acne under control

(*a*) Washing with soap and hot water for about five minutes or more each day will help remove grease from the skin Flannels dipped in hot water should be applied for as long as they can be borne It is for this kind of treatment that many women visit beauty parlours

(*b*) Blackheads may be squeezed out from time to time This is not an easy manœuvre to carry out on yourself and a friend preferably one suffering from the same trouble should be asked to help You can do the same thing for him in return Alternatively it may be possible for you to attend the sick bay for treatment by an SBA

It is most important that you do not interfere with red pimples or yellow heads After squeezing apply more soap and water then dry yourself well by hard friction preferably with a rough towel

(c) You will be supplied with a lotion which should be dabbed on and then massaged into the skin with the tips of the fingers Here again you may need outside help The

[illegible] effect of the [illegible] will be to dry up the skin so that it feels [illegible] If you become [illegible] uncomfortable stop the lotion for the [illegible] to the skin

(*d*) Sunlight has a beneficial effect in one in the [illegible] guise from the [illegible] to be given but [illegible] the U.K. the sun does sometimes [illegible] the summer [illegible] should take every opportunity to expose yourself in warmer [illegible] there is no excuse [illegible] limit of time [illegible] and requires a good [illegible]

(*e*) Try to [illegible] and discocoa. Too much [illegible] is bad for [illegible] also [illegible] bread pudding [illegible] and suet puddings. Any other foods and drink should be avoided [illegible]

(*f*) Remember that until the disease has been [illegible] will always be [illegible] money for new spots to appear from time to time [illegible] to carry out the instructions. But do not be depressed. [illegible] complete cure is certain

(*g*) Keep in regular touch with the sick bay [illegible] possible to arrange special treatment for you

Provided regular treatment is carried out most Service patients are able to keep their acne reasonably under control. When they go abroad there is generally considerable improvement chiefly brought about by regular exposure to sun and air. Exceptions to this rule are engine room ratings with severe cystic acne and marine commandos living ashore in a hot humid climate e.g. the Malayan jungle. These do badly because of unsuitable working and living conditions, lack of washing facilities and insufficient exposure to sunlight. Tropical acne is considered by some to be a separate entity and generally necessitates invaliding to a temperate climate.

Warts

The commonest dermatological condition in the service.

Treatment.—Unless you are a wart charmer the treatment depends on the anatomical site, size and number of the lesions.

If the patient has more than a dozen it will probably be necessary for him to have them burnt off under general anaesthesia.

Large warts (over ½ in. in diameter) generally require to be burnt off under local anaesthesia.

Filiform warts on the beard area generally need to be curetted or burnt off under local or general anaesthesia.

Apart from the above types most warts can be treated in the average sick bay.

Small lesions will generally respond to the twice weekly application of trichloracetic acid or fuming nitric acid carefully applied with an orange stick after clipping away the superficial callus.

Carbon dioxide snow machines (sparklet type) are available to shore establishments. Firm application for one to three minutes is necessary, the length of time depending on the thickness of the skin. (This is much longer than that recommended in the "Book of Words" compiled by the makers.) The roofs of

the blister may be lipped every other a few days and [illegible] dressing applied

Plantar warts The chief problem here is the relief of pain which can only be achieved by the easing of pressure This is best done by the application of surgical adhesive felt pads The central hole should be larger than the wart itself which will tend to grow out and can be more satisfactorily dealt with in one of the following ways

(*a*) Carbon dioxide snow (generally about three minutes in this area)

(*b*) Formalin 3 per cent soaks best carried out in a shallow saucer for about ten to fifteen minutes daily Once a week the superficial callus should be clipped away

(*c*) Occlusive elastoplast dressings kept in situ for three days will cause softening of the lesions which may then be clipped away gradually Painting with 25 per cent podophyllin in tinct benzoin co or 10 per cent formalin will hasten this process

If response is unsatisfactory to these measures which should be carried out for at least a month it is probably advisable to refer to a dermatologist with a view to surgery or radiotherapy Surgical treatment of plantar warts should generally be confined to diathermy or curettage for either of which general anæsthesia is absolutely essential Excision is liable to leave a permanent painful scar

Penile warts Will respond readily to the daily application of 3 per cent podophyllin in propylene glycol with cotton wool on an orange stick followed by a simple dusting powder About five applications are generally necessary The treatment should not be given if the area is still sore from the preceding application but there is little danger of an acute reaction

Scabies

The diagnosis can generally be made on (1) The presence of burrows especially in the webs and sides of the fingers (2) The distribution involving webs of fingers wrists outer borders of axillæ lower abdomen genitalia and upper thighs and buttocks

Principles of Treatment—The bringing of the acarus to the surface of the skin so that it is readily accessible by means of a hot bath

The effective disinfection of the acarus and ova by thorough application of Lorexane or benzyl benzoate to the whole of the body surface from the neck to the toes This must be done by sick bath staff

The avoidance of chemical dermatitis Benzyl benzoate is a primary irritant and will cause an inflammatory reaction in the majority of persons if applied too roughly too often or to an infected or abraded skin surface Do not scrub the skin before application Do not apply with cotton wool use a 2 in 3 in soft bristled paint brush instead Never subject the skin to more than two applications It is safer to examine the patient for a reaction before even the second application

Irritation may persist for up to a fortnight or longer, if there is superimposed

Chemical dermatitis Treat this with sedative applications e g calamine liniment or zinc cream with 1 per cent ichthyol

The acarus cannot exist for long at a temperature below that of the skin Therefore disinfestation of clothing is unnecessary Airing is all that is required

Remember that scabies can be acquired only by intimate contact with an infected person generally during coitus There is little danger of accidental infection e g mess decks There is an incubation period of up to six weeks before the disease becomes manifest which accounts for cases arising in ships that have been at sea for a long time

The following includes a practically complete dermatological armamentarium Experimentation with other applications may well have disastrous results All preparations are available in the Service Afloat Scale or can be obtained from R N Hospitals

LOCAL APPLICATIONS

Type	*Examples*	*Indications*
Wet dressings	2 per cent. boric lotion 1 alum acetate Pot permang 1 8 000 (the latter may be used as a bath)	Acute weeping dermatoses especially if secondarily infected
Skin lotions	Lotio calamine B P C (in which may be incorporated 1 2 per cent phenol 1 3 per cent ichthyol 5 10 per cent Liq picis carb 50 per cent lotio plumbi (N F) Lot pot salph cam zinco 3–10 per cent (N F)	Any irritating skin lesion (not weeping) If too drying substitute liniment or cream Acne
Ointments and creams	Lot calamine oleosa (N F) Cremor zinci B P C (1 5 per cent ichthyol or 3–10 per cent liq picis carb may be incorporated)	Sabaceic eczema (add 1 per cent brilliant green if secondary infection)
Ointments	Ung dithranolis B P Pix cfix	Chronic psoriatic patches Tinea cruris (uncomplicated)
Pastes	Castellani's paste (=pig magenta N F) Liq picis carb Tenth lactic acid 1 tannic acid 3 per cent podophyllin in propylene glycol	Tinea (and if secondarily infected or eczematized) Chronic Eczema Warts Warts Penile Warts
Sprays	Lotio cupro zincica (N F) with 25 per cent spirit (=Eau d'Alibour)	Impetigo
Powders	Basic dusting powder Undecylenate dusting powder Perso C.P foot dusting powder	Intertrigo and sweat rashes Prophylaxis against tinea pedis Hyperidrosis of feet
Occlusive dressings	Viscopaste.	Chronic irritating dermatoses

V [illegible]

If [illegible] This method [illegible] applied [illegible] If the dressings are allowed to dry they will stick to the skin and [illegible] will be painful and cause damage On the other hand if evaporation is prevented by the use of moisture-proof material e g jaconet the skin will rapidly become irritable hot and soggy and liable to become secondarily infected Wet dressings should not be continued during the night unless the nursing staff is adequate to renew them frequently Pastes should be used instead Wet dressings seldom need to be used for more than forty eight hours

Shake lotions should not normally be used in hairy areas or in the presence of exudation or an unpleasant crusted mess is liable to arise

Liniment and creams are perhaps the most useful applications especially for out patients They are easy to apply and seldom cause sensitization unless used in the acute weeping stage

Pastes should normally be applied on calico or other smooth material (*not* lint) They should never be rubbed into the skin or damage is bound to result They should be applied once or twice daily and the skin need not be cleaned before each dressing

Ointments should normally be rubbed gently into the affected part For this reason their use is limited They should not be used if the skin is at all eczematized

One per cent Cetavlon is useful in cleansing the skin but should be avoided if the skin is weeping

I am indebted to Surgeon Captain C Keating *C B E* R N for permission to publish this article.

REFERENCE.

INGRAM J T (1953) *Lancet* 2 149

TWO CASES OF POISONING BY MARKING INK

BY

Surgeon Lieutenant H J A HAHN, R N

BLACK marking ink as issued for marking clothes is naturally widely distributed and it is therefore difficult to keep a close check on its use I venture to report two cases of poisoning due to it because of the alarming symptoms and the commonness of the poisoning agent Both cases occurred in Boy entries who drank a small quantity of the ink in the belief that it would render them permanently unfit for the Service It would appear that marking ink is known to certain 'Old Hands' as a poison and that there is a popular belief that it can be used for producing illness The first boy admitted having been advised

[illegible] by the effects of drinking the ink by some older person. The latter told him that it would "ruin his stomach." No records of previous cases of poisoning by drinking ink have been found at this establishment.

Case I.—On the morning of September 15 a Boy aged 16 was brought to Sick Quarters [illegible] by his messmates. They stated that he had been "looking queer" for the last half-[illegible] hour, had been "glassy" and "seemed dead." He had eventually told them that [illegible] "drunk ill."

On examination he complained of headache and vague epigastric pain, but this latter [illegible] disappeared when he lay down. There was no nausea or vomiting. He stated that he had been quite well half an hour before, and that he had then felt ill suddenly. P.M.H. [illegible]

[illegible] The Boy was deeply cyanosed. His lips, ears, fingers and toes were [illegible] and his skin was grey and moist. It was noticed that his palpebral [illegible] appeared rather more brownish than blue. He was a little drowsy, but able to [illegible] intelligently. He was able to walk, but with a staggering gait. Pulse [illegible]. Respiration 20–25/min. B.P. 120/80. Temperature 99. There was a little [illegible] sufficient seemed reduced on the left side. Intercostals and diaphragm [illegible]. The remainder of the physical examination was normal.

[illegible] was thought to be likely, but the patient firmly denied it. He [illegible] food in his mess tins. He was given oxygen by B.L.B. mask, but he [illegible] drowsiness, and his respiration rate increased to 30/minute and pulse to 140/minute.

Influenced by the recent occurrence of the disease in the district, a tentative diagnosis of polymyositis with impaired respiratory function was made, and he was discharged to the Isolation Hospital [illegible]. In the ambulance his condition seemed to deteriorate. He had two short periods of temporary arrest with deepening cyanosis and vomited a small amount of blood. Although he appeared to be in the point of death, but rallied on hospital his condition improved at the same. The cyanosis spread down his neck and chest. He was pronounced dead [illegible] after admission. He was placed in an oxygen tent.

During the night he started to vomit a yellowish fluid and gradually became semi-comatose. [illegible] he admitted drinking half an ounce of marking ink in the bottom of a mug filled with the contents of water about half an hour before being taken ill. The [illegible] taking the ink to the start. The interval was approximately six and a half hours.

A sample of venous blood was taken and spectroscopic examination revealed the presence of methæmoglobin. The blood was of the chocolate colour when withdrawn. Intravenous methylene blue was given and his condition improved rapidly thereafter. Two days later he was discharged to full duty and a blood count two days after that showed—R.B.C. 4,910,000, Hb. 97 per cent. He has remained well since.

Case II.—On the morning of September 27 another Boy aged 16 presented himself [illegible] that he had taken "a mouthful" of marking ink about half an hour before. He said he felt depressed and did not know why he had taken it. His appearance and condition was almost identical to Case I except that his respiration appeared normal. His tongue and hands were stained black—a circumstance not seen in Case I.

He was given a lightly gastric lavage during which much food flecked with black particles was washed out. When the washings were clear he was given two fluid ounces of liquid paraffin and transferred to the ward. No oxygen was required. Spectroscopic examination of the blood in the ward showed a spectrum characteristic of sulphæmoglobin.

50 mg. of methylene blue (10%) intravenously were given intravenously and the result was dramatic. In ten minutes his colour began to return to normal and at the end of an hour there was no cyanotic cyanosis left. During the afternoon he remained drowsy and stirred a little confused, but by the evening he was much improved. He sweated profusely. His urine was green for two days, presumably due to derivatives of the

methaemoglobin. He was discharged to duty two days later. His blood [illegible] showed R B C 4 [illegible] 000 111 9 per cent.

While in the ward this Boy stated that he had been constipated for [illegible] previously and was thereafter given an enema with good result. After that his bowels [illegible] regular.

Five days after drinking the first dose of marking ink this Boy again [illegible] to the Receiving Room stating he had drunk some ink half an hour before and had [illegible] hands felt all again. He was again evacuated and his appearance and examination findings were the same as on the previous occasion. He denied drinking any more ink.

Treatment was as before and his gastric washings contained curds [illegible] black particles and yellowish globules. Disappearance of symptoms [illegible] as before after further intravenous methylene blue. On this occasion [illegible] was clearly almost [illegible] by spectroscopic examination of venous blood.

It was assumed that he had drunk more of the ink but was trying to conceal the fact in the hope of avoiding punishment.

Discussion

(1) *Composition of Marking Ink*

A sample of the marking ink was sent to the Admiralty Chemistry Department, H.M. Dockyard, Portsmouth, where it was found to be similar to Service pattern 4095 containing nigrosine powder, oil soluble, 100 parts dissolved in commercial aniline oil 400 parts.

It was concluded that the poisoning in these two cases was due to the aniline in the ink.

(2) *Toxicology*

There are several substances which can cause methaemoglobinaemia, particularly in industry. Being volatile and also a far solvent it is readily absorbed through lungs and skin, and hence the onset of poisoning may be very insidious. Individuals poisoned by aniline may feel perfectly well even when they appear deeply cyanosed. The level of methaemoglobin in the circulation may be as high as 40 per cent before any systemic disturbance is noticed (Patty, 1949). This may account for the comparative absence of symptoms in Case II. Above about 40 per cent level headaches and epigastric pain develop as in Case I, as the level rises higher the oxygen carrying capacity of the blood is seriously impaired and dyspnoea, loss of consciousness, and death supervene. Anaemic individuals therefore tend to succumb more easily than those with a normal red cell count. It seems that in Case I the boy escaped death by a very narrow margin.

Aromatic amines and nitro compounds are believed to be converted to p aminophenol in the body and it is probable that this substance is the factor which actually produces the change in the blood. P aminophenol is detoxicated and discharged in the urine. Liver or kidney damage does not appear to result in this type of poisoning (Patty, 1949).

(3) *Formation of Methæmoglobin and Sulphæmoglobin*

It is believed the poisoning agent converts the hæmoglobin of the blood into methæmoglobin by oxidation, the combined oxygen being firmly bound and not available for tissue oxidation. Hence the oxygen carrying power of the blood is impaired. The methæmoglobin is not a stable substance and reverts to hæmoglobin spontaneously once the poisoning agent is cleared from the system. In untreated cases which survive this occurs in twenty four to forty eight hours. Hæmolysis does not occur to any appreciable extent (Patty 1949). In both cases described the blood-plasma was of normal colour.

Sulphæmoglobin occurs much less commonly and is formed by the combination of hæmoglobin with hydrogen sulphide from the colon (Price 1950). It is said that this occurs more commonly in constipated subjects in which there is an increased fermentation in the colon. The poisoning agent is believed to sensitize the hæmoglobin in some way so that it readily combines with hydrogen sulphide. The findings in Case II seem to support this theory as on the first occasion when sulphæmoglobin was found spectroscopically constipation had been present for five days previously.

(4) *Treatment*

When the poisoning agent has been removed from the stomach treatment is aimed at clearing the blood of methæmoglobin. This is effected by intravenous injection of methylene-blue which acts by reducing methæmoglobin to hæmoglobin. It is probable that this action is catalytic as only a small quantity of the dye is required to effect reduction of a large amount of methæmoglobin. The quantity recommended is 1–2 mg/gm. methylene blue per kilogram body weight. There is some controversy over the effectiveness of methylene blue and it has been stated that 1·5 per cent. solution of glucose intravenously is a more effective reducing agent. About a litre is required in the average severe case. In the present two cases however methylene blue appeared to be highly effective.

Summary

(1) Two cases of methæmoglobinæmia due to ingestion of marking ink are described. In one case sulphæmoglobin was detected in the blood.

(2) Marking ink contains a high proportion of aniline and this is considered to have been the poisoning agent.

(3) Methylene blue injected intravenously was shown to be highly effective in relieving the cyanosis. Thereafter recovery was rapid.

My thanks are due to Surgeon Captain D. H. Kernohan R.N. for permission to publish these two cases and to Dr. C. D. Lawrence Superintending Scientist H.M. Dockyard Portsmouth for analysis of the marking ink. I am also indebted to Dr. Zwannenberg of Ipswich Isolation Hospital and to S.B.P.O. M. I. Jones for spectroscopic examination of the blood in both cases.

Bibliography

Gibson, C. S. (1936) *Essential Principles of Organic Chemistry*.

Patty, F. A. (1949) *Industrial Hygiene and Toxicology*, II, 987.

Price, F. W. (1950) *Textbook of the Practice of Medicine* 870.

Reviews

SYMPOSIUM ON FATIGUE. Edited by W. F. Floyd and A. T. Welford. 1953. Pp. xiii + 196. Illustrations. London: H. K. Lewis & Co. Ltd. Price 24s. 0d.

This book is an account of a series of papers given at a Symposium on Fatigue held by the Ergonomics Research Society. This body is to be congratulated on its initiative. The subject is a difficult one and it is not surprising therefore if very little fundamental information is available on the phenomenon of fatigue itself. After severe exercise a subject may be physiologically abnormal for periods of some hours but even after returning to an apparently normal physiological level he may still feel fatigued. (The Navy have another word for this connected with a particularly pungent type of tobacco!) No satisfactory explanation of the phenomenon is known. Sir Frederic Bartlett in his introductory paper stresses the psychological aspects involved particularly the elusive factor of "will power". It is this factor which enables a man under the most adverse conditions and which should be worth study for the fighting forces particularly from the point of view of the effect of training and discipline. The well known doggedness of the British "Tommy" is a case in point. It may be a sign of underdevelopment of the higher centres of the brain!

Professor A. Hemingway gives a very clear account of the physiological background of fatigue—most necessary when dealing with a group of psychologists in the field of the Ergonomics Society.

It is quite impossible to mention all the authors in a short review of this type and the book itself is recommended for serious study. If there is any criticism it is that its form is a series of scientific papers appears disjointed and not free from the taint of "sogginess". The fact that very little mention is made of the effect of cold climate on fatigue is surprising.

CLINICAL DENTAL PROSTHETICS. By H. R. B. Fenn, F.D.S.R.C.S., Professor of Dental Prosthetics, University of London; K. F. Liddelow, F.D.S.R.C.S., H.D.D.R.C.S.Edin., Head of the Prosthetic Department, King's College Hospital Dental School; and A. P. Gibson, L.D.S.R.C.S., Senior Lecturer in Dental Prosthetics, King's College Hospital Dental School. 1953. Pp. xxx + 502. London: Staples Press Ltd. Price 50s. 0d.

This textbook fills a gap in dental literature and is a book which will be welcomed by the dental student particularly but also the practitioner. The student is taken step by step through all the well tried and successful techniques of impression taking, recording occlusion, trial and fitting of full and partial dentures. The uses and limitations of the materials he will use, the pitfalls he will encounter and the reasons for failures are explained.

Chapter II on Applied Anatomy of the mouth is particularly good and is recommended for study by both student and practitioner.

Written in a simple and straightforward manner and well illustrated this is a truly admirable book for the dental student and for the practitioner—a book in which he can review again the first principles and perhaps correct the faults which have crept into his technique over the years.

DISEASES OF THE THROAT NOSE AND EAR Edited by F W Watkyn Thomas, M A M D B Ch Cantab F R C S Consulting Surgeon to University College Hospital and the Royal National Throat Nose and Ear Hospital Consultant to Otolaryngology to the Royal Navy 1953 Pp xvi + 880 Illustrations 367 (including 27 coloured plates and the text) London H K Lewis & Co Ltd Price £5 10s 0d

Specialists in this branch of surgery who were fortunate enough to have Mr Watkyn Thomas previous book on diseases of the ear eagerly awaited his new book and it will not disappoint them for if possible the present work is an improvement in that it takes in all the features of disease of the Upper Respiratory Tract in addition to his awa mmmable section on diseases of the ear

There is a long list of distinguished contributors and R N Medical Officers will be particularly familiar with the names of Lambert C Rogers the present Consultant in Neurosurgery and Stephen Stuart who was the Consultant in Otolaryngology for some time after the late war

The book itself is a most comprehensive survey of diseases of the Upper Respiratory Tract It is as stated in the preface written for the Specialist and has the advantage of the contributors vast experience coupled with the intelligent extraction of modern teaching and statistics from similar but longer established publications

The section on diseases of the ear which is Mr Watkyn Thomas personal contribution will probably become a standard reference as all aspects of examination clinical application of anatomical detail and operative technique are dealt with in a comprehensive and most useful manner It will fill a long felt want in British textbooks and is complete with the latest lore on audiometry otosclerosis and the surgical and chemotherapeutic treatment of diseases of the ear

Mr Watkyn Thomas is well known as one of the greatest of the English Otologists and to those who are fortunate enough to enjoy his company as a first-class raconteur of the epigrams of his contemporaries his book is liberally endowed with quotations One in particular of Bland Sutton s sums up the whole object and achievement of this exacting undertaking, namely that Surgery is two things half of it s common sense and half of it anatomy

SURGERY OF REPAIR AS APPLIED TO HAND INJURIES By B K Rank M S Melbourne F R C S Eng F R A C S Honorary Plastic Surgeon Royal Melbourne Hospital and A R Wakefield M S Melbourne F R C S Eng F R A C S Honorary Plastic Surgeon Children s Hospital Melbourne With foreword by Sir Gordon Gordon Taylor 1953 Pp xiv + 256 Edinburgh E & S Livingstone Ltd Price 40s 0d

A foreword to a new surgical publication by Sir Gordon Gordon Taylor is sufficient testimony to recommend it to all surgeons and in this particular case to those directly concerned with the surgery of the hand

The arrangement of this book is excellent and the illustrations and diction beyond praise The work is divided into five parts and in all contains eighteen chapters The anatomy of the hand takes on a new significance as it is described in conjunction with function

A very common sense attitude is adopted in assessing any particular injury and the patient s approach to the problem and his functional requirements for his particular occupation take precedence over the surgeons ambitious flights of fancy In this connexion the problem of when to amputate a damaged digit and when to preserve it at all costs is clearly differentiated

The primary treatment of hand injuries takes pride of place but in addition to this reparative surgery reconstructive surgery is also fully described Some principles of plastic surgery are laid down but many of these require practical experience in this branch of surgery to render them truly effective This book consolidates the convictions that a sound working knowledge in plastic surgery is essential for a satisfactory approach to traumatic surgery

The primary treatment and the treatment of burns has been described in a most admirable fashion. This approach to a very important problem should receive careful consideration and should act as a deterrent to new fashions except in experimental departments where progress can be achieved only by trial and error.

The wealth of information in this book must be part of the armamentarium of all those liable to be called on to treat damaged hands. This must be of particular significance to the Naval Surgeon.

Official History of the Canadian Medical Services 1939–1945. Vol. II only is printed. Vol. I will be printed in January 1954. Edited by W. K. Feasby, B.A., M.D., Lieutenant Colonel, R.C.A.M.C., Supplementary Reserve, Lecturer in Physiology, University of Toronto. Pp. xv + 537. Price $5.00.

This volume is one of two—the other deals with the organization, development and military activities of the medical services of the Canadian Armed Forces.

The present volume, clinical in nature, has been read through with great interest and pleasure. Its value to the Canadian Medical Services in any future war is obvious, but the statistical tables which form an important part of the book will serve Canada as a guide in calculating man power for the future. The lessons learned have been included and these, too, will help at once in shape policy for Service medicine.

This book is not a dry compendium—it is full of clinical material of the greatest interest to any doctor. Diagnostic difficulties are discussed and lines of treatment analysed in the most impressive way. The chapters particularly valuable are perhaps those on preventive medicine and hygiene in large bodies of men, those on wounds and injuries, and the one on neuro-psychiatry.

Occasionally the clinical conclusions seemed a little facile to the reviewer. Thus on page 9, in discussing the difficulties sometimes experienced in distinguishing cases of glandular fever from acute leukaemia, it is stated that study of the mononuclear cells made the correct diagnosis possible. A more critical physician might prefer to go by what was happening to the red cell count. Again, the reviewer would not agree personally with the favourable opinion expressed on the treatment of urethral stricture by urethrotomy.

However, any formal criticism of such a work as this is impossible, so admirable is the presentation of every subject. And it may be added that there are many photographs in black and white and quite a number of paintings reproduced in colour.

Parkinson's Disease and its Surgical Treatment. By Leslie C. Oliver, F.R.C.S.Eng., Neurosurgeon, West End Hospital for Nervous Diseases, London, Royal Northern Hospital, London, General Hospital, Southend on Sea, and Officer in Charge Neuro-Surgical Centre, Old Church Hospital, Romford, Honorary Neurosurgeon to the Friern Hospital, London. 1953. Pp. viii + 88. Illustrations 12. London: H. K. Lewis & Co. Ltd. Price 12s. 6d.

This small book describes the Pathology, Aetiology and Symptoms of the Parkinsonian Syndrome in a clear and concise manner. A clear picture is obtained of the problems of this distressing disease. Medical treatment is discussed and the various types of drugs etc. noted.

The author then passes to the surgical treatment of this condition and it is stated in the preface that out of a series of one thousand cases of Parkinson's Disease only 93 patients were considered suitable for surgery. The various types of operation are discussed and the case histories are recorded with follow-up notes. This book brings to one notice that in a small number of cases of Parkinson's Disease surgery had something to offer in selected cases.

The list of references is extensive and students of neurology will find much of value in this small but well written treatise.

BACTERIOLOGY FOR MEDICAL STUDENTS AND PRACTITIONERS By A D Gardiner D M F.R.C S, F.R.C P, Regius Professor of Medicine Oxford Student of Christ Church One time Professor of Bacteriology and Fellow of University College Oxford Fourth Edition 1953 Pp vii + 271 London Oxford University Press Price 12s 6d

The present edition of this book is again produced in a most concise manner being easily readable and above all understandable Since the last edition with its subsequent second and third impressions greater knowledge and experience has been gained in the field of viruses and antibiotics and the author has succeeded in completing all the latest information in such a way that it presents the foundationals very clearly to the reader

One does not envy the lot of writers of bacteriological textbooks The field of study is so great and advances so rapid that in present all the salient facts in such a small volume is no mean feat

Consisting of sixteen chapters and covering just over 260 pages the whole book proves of absorbing interest embodying as it does, a wealth of information that will prove immensely useful to medical students and practitioners and it is plainly evident after reading through each chapter that the author has spared no efforts in presenting a subject of which he has such a profound knowledge in such an admirable manner

HEART AND CIRCULATION Diagnosis and Treatment By Meyer Solomon M D F A C.C. Chief in Cardiology Unity Hospital Consultant in Cardiology Rockaway Beach Hospital and Madison Park Hospital 1953 Pp xiv + 357 New York Froben Press Inc. Price $7.50

This book the author claims has been written for the general practitioner and the medical student. A book of this modest size on the heart and circulation inevitably suffers from brevity where a fuller account would lend coherence and smoothness Nevertheless, this very criticism punctuates its virtue of easy reference and the accessibility of its material There are useful chapters on anatomy and physiology and perhaps the reviewer is wrong in considering their over fifty pages as a generous allowance for this in a book of its size The diagnosis of mitral stenosis is dealt with in less than half a page while the treatment of subacute bacterial endocarditis occupies a few lines and is lacking in clarity The differential diagnosis of the cardiac neurosis covers two and a half lines and there is scant mention of pregnancy and cardiac disease Therapy is largely confined to the last chapter in the book and though this may result in economy of space it implies frequent reference to the end The author's enthusiasm for the use of ACTH and Cortisone in rheumatic fever is perhaps not shared in this country though final evaluation still lies to the future The general lay out of the book is good the illustrations are adequate and the printing and paper excellent

OUR NATIONAL ILL HEALTH SERVICE By Sir Sheldon F Dudley *K C B* F R S Hon L L D Ed M D F R C P Lond Hon F R C S Ed D T M D P H Medical Director of the Royal Navy June 1941 January 1946 1953 Pp xiv + 225 London C A Watts & Co Ltd Price 15s 0d

This is a most interesting and readable book It is somewhat cynical and unorthodox in places but pursues a coherent philosophy throughout and the Dudley personality pervades its pages It is provocative and stimulating

He states that in some diseases there tends to be a loss of time if doctors are called in to treat them For example if one gets an attack of flu the average case may be back to work within a week if self-treated. But if a doctor has charge he rightly fears the possibility of complication arising and so doesn't allow the patient to return to duty perhaps under ten days He shows how important it is for Medical Authorities to have executive power and not to have to depend on the decision of Government Officials Executive Officers etc to allow Medical Authority to proceed with necessary preventative measures He compares U N N.K.A with W.H O The former was allowed ample financial

means and executive power whilst the latter is under strict supervision and is thereby relatively almost paralysed.

There is an interesting section on human ecology and epidemiology written in popular phrase for the ready understanding of the layman. Historical episodes follow which show the influence of disease on the contestants in battle. Disease is often an important deciding factor and not always good generalship etc. The latter however usually gets the credit for victory. There is undoubtedly much truth in all this with emphasis on the importance of hygiene discipline.

The section on the Preservation of Health in the Royal Navy is most interesting instructive and stimulating. He makes a case for regarding V.D. as an occupational disease of sailors!

The Epilogue consists of various aphorisms and truisms which the mature mind readily accepts as sound and stable philosophy.

The book is strongly recommended for reflection by both doctors and laymen alike.

ANATOMY OF THE AUTONOMIC NERVOUS SYSTEM. By G. A. C. Mitchell, *O.B.E.*, T.D., M.B., Ch.M., D.Sc., Professor of Anatomy and Director of the Anatomical Laboratories in the University of Manchester. Foreword by Sir James Learmonth, *K.C.I.O., C.B.E.*, Ch.M., LL.D., F.R.C.S.Edin. 1953. Pp. xii + 356. 131 illustrations, many in colour. London: E. & S. Livingstone Ltd. Price 55s. 0d.

As a one time demonstrator in human anatomy the reviewer found it a refreshing experience to read again a textbook on the anatomy of the autonomic nervous system when written and illustrated in the manner of this book.

The scholarship of the author is so great that it must have required no immense amount of thought to present it without prodneing a confused picture in the mind of the reader. But this goal has most definitely been achieved and there can be no textbook at the present day that can excel this one in ease of reading and readiness of comprehension. The quality of the paper the clarity of the printing and the excellence of the coloured illustrations and of the photographs help in the achievement of this most difficult feat.

Besides its value as a work on pure anatomy this book will prove invaluable to surgeons in the ever increasing number of operations on this part of the human body. It deserves and will undoubtedly achieve enduring success.

NEW MEDICAL DICTIONARY. The Faber Medical Dictionary. Edited by Sir Cecil Wakeley, Bt. 1953. Pp. 471. London: Faber and Faber Ltd. Price 45s. 0d.

The R.N. Medical Service will wish to congratulate Sir Cecil on his latest literary effort for to anyone who wishes to refer to a medical dictionary and especially a British one this work appears to be the willingly perfect answer. It is large in size and this is because of clearness of exposition and measureness of detail and it is very reasonably priced. If the reviewer could find any fault with this work it would be to regret that some helps in pronunciation have been omitted. To eliminate the customary pronunciation bracket after most of the words is a very good idea but to eliminate it after all of them is perhaps not, for selected words this bracket can be very helpful. For example the word schizophrenia is often mispronounced in this country. The medical profession possibly through giving the *ch* an Italian instead of a Greek origin often pronounce the first syllable as skitz. Other medical dictionaries, through placing the pronunciation bracket after the word show the correct pronunciation of this syllable to be skiz but there is no such help in this dictionary, though each word is accurate. It is suggested that the restitution of the pronunciation bracket after certain words might perhaps be an advantage in the next edition of this admirable work which carries with it our best wishes for its success.

We acknowledge with thanks receipt of the following publications

Anales de la Facultad de Medicina Montevideo Annales Medicinae Internae Fennicae, Annals of Tropical Medicine & Parasitology Australian Journal of Experimental Biology & Medical Science Broadway *British Medical Journal Bulletin International des Services de Santé Bulletin of the World Health Organization, Chronicle of the World Health Organization Guy's Hospital Gazette Journal of the Bombay Grant School of Medicine Journal of the Irish Medical Association Journal of the Royal Army Medical Corps Journal of the Royal Naval Scientific Service Kitasato Archives of Experiment Medicine Medical Journal of Australia Medical Journal of Osaka University Medical Press Medical Technicians Bulletin Middlesex Hospital Journal* Military Surgeon *Proceedings of the Staff Meetings of the Mayo Clinic Revue de Medicine Navale St Mary's Hospital Gazette St Thomas's Hospital Gazette Sydney University Medical Society Bulletin Tohoku Journal of Experimental Medicine Tropical Diseases Bulletin United States Armed Forces Medical Journal United States Medical Technicians Bulletin, Wakayama Medical Reports Yokohama Medical Bulletin*

ROYAL NAVAL MEDICAL SCHOOL

(1) The following staff changes are reported

12th October 1953 Surgeon Captain J G Maguire *C.B.E.* as Medical Officer in-Charge and director of Medical Studies vice Surgeon Capram J G Holmes *O B E* placed on the retired list at his own request Surgeon Captain Holmes is now on the staff of the Civil Defence School Falfield, Gloucestershire.

14th December 1953 Surgeon Captain T L Cleave joined as Director of Medical Research

17th August 1953 Surgeon Lieutenant C O L Hughes completed his course at A E R L Harwell and assumed duty as lecturer in Radiological Warfare vice Surgeon Lieutenant-Commander F A F Mackenzie who is now taking a course in Radiology in London

(2) Courses on Radiological Warfare continue 3 658 Service and civilian medical dental and nursing officers have attended these courses

(3) A medical meeting was held on 11th September 1953 when the subject for discussion was Burns A film on the preparation of Dextran was shown

(4) The Senior Officers Technical Course visited the Medical School and R N P L on 14th October 1953

(5) The Director of Dental Studies accompanied by Mr F A McCallum Demonstrator Dental Technician of R N Barracks Portsmouth attended the Annual Meeting of the British Dental Association at Buxton Derbyshire in July 1953 and showed a series of instructional models in hard and soft acrylic. These models illustrated the various stages of difficult dental operations e g cysts unerupted and impacted teeth fractured mandible etc The hard and soft structures were in natural colour and allowed for incisions reflection of soft

[illegible] the [illegible] and teeth to be [illegible] A model in acrylic of the [illegible] of the [illegible] was also shown

[illegible] the benefit of the children of Medical and Dental Officers of the Port the film "Let's Keep Our Teeth" was shown in the R.N. Medical School on 15th September. There was a large attendance of parents and children

On the 18th December a film "The Treatment of Jaw Injuries" (Army Kinema Corporation) was shown to the Dental Officers of the Port. This film shows actual conditions "in the field" illustrates very well the maxillo-facial injuries to be expected in War and should be seen by all Dental Officers without previous experience of War conditions

(6) A Symposium on Dentistry in the Three Services will be held from the 8th until 12th March 1954

JOURNAL OF THE ROYAL NAVAL MEDICAL SERVICE
ANNUAL REPORT, 1953

Balance Sheet

Assets	£	s	d	Liabilities	£	s	d
Balance in Bank 31.12.53	121	15	4				
3% Funding Stock	100	0	0				
3½% War Loan	600	0	0	Nil			
Charges for advertisements not yet paid Autumn 1953 issue	69	10	6	Balance Credit	891	5	10
	£891	5	10		£891	5	10

Audited and found correct

H. R. Gardner, Lieutenant (S) R.N.

THE WAVERLEY COMMITTEE

The Committee selected by the Government to review the arrangements for providing medical and dental services for the Armed Forces at home and abroad in peace and war is as follows

Viscount Waverley, F.R.S. Chairman
Sir Harold Boldero, F.R.C.P.
Mr. S. K. Dennison
Sir Thomas Gardiner
Sir Arthur Porritt, F.R.C.S.
General Sir James Steele

Mr. E. F. Donaldson, Ministry of Defence, to act as Secretary

Contributed by "Dr. Barnado"

A brainworker is one whose brain never ceases to function from the moment he gets up until he arrives at his desk

News of the Service

OBITUARY

Surgeon Captain P B EGAN R N (Rtd), died on the 1st October 1953 Born on the 29th January 1883 he qualified in 1906 and entered the R N Medical Service as a Surgeon in May 1908 He was promoted to Surgeon Lieutenant Commander in 1914 Surgeon Commander in 1920 and was placed on the Retired List (Age) on 29th January 1933 with the rank of Surgeon Captain

During World War I Surgeon Captain Egan served in H M Ships *Doris Bramble Empress of Asia Sirsa, Indus* and *Topaze* From the 12th January 1936 he was employed as Final Examining Medical Officer at Bristol continuing on the outbreak of World War II in 1939 and being appointed for Y Board duties in addition in January 1942 He held this appointment until his release in Class A in December 1946

Surgeon Commander (D) D PATERSON R N (Rtd) died on the 3rd October 1953 Born on 6th April 1887 he qualified in 1911 and entered the R N Dental Service as a Civilian Dental Surgeon in August 1912 He was granted a Temporary Commission as a Dental Surgeon R N V R in March 1915 and transferred to the Permanent List of Dental Surgeons on 9th March 1920 He was promoted to Surgeon Lieutenant-Commander (D) in 1920 being placed on the Retired List (Age) in April 1932 with the rank of Surgeon Commander

During World War I Surgeon Commander Paterson served in H M Ships *Powerful* and *Ganges* In 1936 he volunteered for service in Emergency and was employed for a short time at R N Barracks Devonport During World War II he served in H M S *Cochrane* until he reverted to the Retired List in 1941

Surgeon Captain T E BLUNT R N (Rtd) died on the 10th November 1953 Born on 6th December 1876 he qualified in 1903 and entered the R N Medical Service as a Surgeon in 1904 He was promoted to Surgeon Lieutenant Commander in 1917 Surgeon Commander in 1917 and was placed on the Retired List (own request) with the rank of Surgeon Captain in 1926 and was employed as F E M O Southampton from 21st September 1936 until 31st March 1948

During World War I Surgeon Captain Blunt served in H M Hospital Ship *Delta* and in H M Ships *Crescent Champion, Woolwich* and *Columbia* In 1917 he was awarded the Order of St Anne 3rd Class (With Swords) by the Russian Government for distinguished services rendered in the Battle of Jutland (*London Gazette* 5th June 1917)

Surgeon Rear Admiral A R SCHOFIELD died on the 1st December 1953 Born on 18th March 1879 he qualified in 1902 and entered the R N Medical Service as a Surgeon on 23rd November 1903 He was promoted to Staff Surgeon in 1911 Surgeon Commander in 1914 and Surgeon Captain in 1928 He was placed on the Retired List in 1934 being promoted to Surgeon Rear Admiral (Retired List) on the 3rd July 1934

During World War I Surgeon Rear Admiral Schofield served in H M Ships *Centurion Southampton* and in the Medical Department Admiralty in connection with the R N Auxiliary Sick Berth Staff In July 1916 he was recommended for and received early promotion to Surgeon Commander for skilful and untiring devotion to duty during the Battle of Jutland

Surgeon Captain M P JONES R.N (Rtd.) died on the 11th December 1953 Born on 23rd July 1872 he qualified in 1895 and entered the R N Medical Service as a Surgeon on the 12th November 1895 He was promoted to Staff Surgeon in 1903 Surgeon Commander in 1909 and was placed on the Retired List in 1923 with the rank of Surgeon Captain During World War I Surgeon Captain Jones served in H M Ships *Racer, Exmouth, Vivid* and *Courageous*

HONOURS AND AWARDS

Companion of the Order of the Bath

Surgeon Rear Admiral R W Massen *C B E* M D B Ch F R C P

Commander of the Order of the British Empire

Surgeon Captain E T S Rudd M B B Ch F R C S (Ed)

Officer of the Order of the British Empire

Surgeon Commander J M Holford M B, Ch B M R C P

Air Force Cross

Surgeon Lieutenant-Commander W H F Ellis M B B S

Legion of Merit Degree of Legionnaire

Surgeon Captain T B Lynagh M B B Ch

Second Bar to the Polar Medal

Surgeon Captain E W Bingham *O B E* M B B Ch

The award of a second bar to the Polar Medal is believed to be unique amongst naval medical officers and is probably unique in the Service

Surgeon Captain Bingham has been on four expeditions to Arctic and Antarctic regions He has accompanied the British Arctic Air Route Expedition to East Greenland in 1930–31 under the leadership of Gino Watkins The survey paved the way for an air route to Canada which has since proved of such inestimable value both in peace and war As a result of this expedition he received the Polar Medal His second visit was with the H M S *Challenger* Winter Survey Party to Labrador in 1933–34

The British Graham Land Expedition under the leadership of J R Rymill followed in 1934–37 for which Bingham received a bar to the Polar Medal and finally he was leader of the Falkland Island Dependencies Survey in 1945–47 for which he has now received the Second Bar

Queen's Honorary Surgeons

Surgeon Captain A A Pomfret *O B E* M B Ch B D O D O M S
Surgeon Captain J E Oldham V R D M B Ch B F R C S.

Associate of the Royal Red Cross

Miss E N G Gill Superintending Sister Q A R N N S
Miss C F J Cooke Senior Nursing Sister Q A R N N S

PROMOTIONS

To Surgeon Rear Admiral—Surgeon Captain (Acting Surgeon Rear Admiral) R C May *O B E M C*

To Surgeon Captain—P B Jackson J B Patrick A D Sinclair

To Surgeon Commander—L D Arden W J Cranley D J O Donoghue L G Topham F B B Weston The Hon A G Gathorne Hardy

To Acting Temporary Surgeon Commander—A O Connor

To Surgeon Lieutenant-Commander—C R Whieldon J S Ritchie P D A Darbara H R Mallows

TRANSFERS TO PERMANENT LIST

Surgeon Lieutenants D C McNutt W B Wright D E MacKay
Acting Interim Surgeon Lieutenant Commander (D) R S Haigh R N (Emergency)
Surgeon Lieutenant (D) M E P Easton R N (Emergency)

ENTRIES FOR SHORT SERVICE COMMISSION

D G Bluett, M.B B.S., M.R.C.S L.R.C.P J Beeson M B Ch B D S Jones M R C S L R.C.P N P Harris L.D S J M Poppelwell L D S

RETIREMENTS

Surgeon Rear Admiral T Madill *C.B O.B.E* Surgeon Captain J G Holmes *O B E*, Surgeon Captain M Brown Surgeon Commanders E J K Weeks H H Fisher G S Rutherford R C. Foster T McCarthy

WARDMASTER OFFICERS

PROMOTIONS

To Senior Commissioned Wardmaster—S G Allard H F Weller

QUEEN ALEXANDRA'S ROYAL NAVAL NURSING SERVICE

PROMOTIONS

To Superintending Sister—Miss A I Mitchell *A R R C* Miss M A Parry

ADMIRALTY FLEET ORDERS

(This paper is perforated for filing)

3002.—Courses General—R.N Air Medical School—Courses of Instruction

3007 —Dental—Supply of Dentures to Naval Personnel and Entitled Civilians Procedure as to Recovery of Charges

3022 —Surgeons and Agents

3024 —Medical—Civil Service Competitions—Medical Examination of Successful Candidates

3025 —Medical—Eyesight—Night Vision—Tests

3172 —Medical—Vaccination and Inoculation

3200 —Medical Stores—Proprietary Medicines

3201 —Victualling Stores—Clothing Dental Operating Jackets

3242 —Pay and Allowances—Medical and Dental Officers—Full Pay and Allowances—Revised Rates.

3249 —Surgeons and Agents

3251 —Medical and Dental Treatment—Reciprocal Arrangements for British and Canadian Servicemen

3289 —Dental Stores—Classic and Acrylicent and Anterior Acrylic Teeth

3333 —Medical—Suspected Contacts with Infectious Disease—Notification of Movements

3351 —Naval Stores—Medical—Naval Stores for Medical Purposes—Additional Allowances to Ships Entitled to a No 4 Medical Unit

3350 —Medical Stores—Service Afloat X ray Apparatus—Care of

3394 —Dental Treatment—Entitlement, Facilities Records, Returns etc., and Scale of Fees

3409 —Surgeons and Agents

3474 —Officers—Medical and Dental—Grant of Short Service Engagements

3553 —Medical Dental and Hospital Consultants

3554 —Medical—T A B Inoculation

3631 —Medical Dental and Hospital Consultants

3643 —Officers—Dental Officers—Private Practice—REPORTS

3659 —Naval Stores—Medical and Dental—Obsolescence and Reclassification

3708 —Medical—Disposal of Personnel Placed Permanently in a Reduced Medical Category

3707 —Medical—Mass Radiography—Examination and Recording

3708 —Medical Treatment of Officers and Ratings when Sick on Shore, on Leave or on Detached Duty—Use of Form S 26 Amended to Apply to Officers and Ratings

3747.—Dental Stores—Local Anaesthetics.

3800 —Leave Personnel Admitted to Hospital During Terminal Leave

3806 —Surgeons and Agents.

3861 —Medical—Documentation—Instructions.

3862 —Medical—Examinations—Officers Borne on the Books of H.M.S. "President"—Annual Medical Examinations

3868 —Pay and Allowances—Allowances—Uniform—R.N., R.M., W.R.N.S., Q.A.R.N.N.S., V.A.D. and Reserve Officers—Revised Initial Promotion and Reversion Grants.

3877 —Surgeons and Agents

3892 —Naval Stores—Dental—Waste Dental Wax—Re-conditioning

Notice

The Editor invites medical officers to send in original papers on professional subjects travel personal experiences &c Items of news and matters of interest to the naval medical service will be welcomed from ships and establishments on home and foreign stations. Notices of births marriages and deaths are inserted free of charge to subscribers

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All communications should reach the Editor on or before the first of the month preceding the date of issue. Unless clearly written they should be typed in order to avoid mistakes and they should be addressed to the Editor Journal of the Royal Naval Medical Service, Monckton House Alverstoke Gosport Hants

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Articles

BURNS

Report of a Meeting held in the R.N. Medical School

So much has been written about the treatment of burns and there is such diversity of opinion that one hesitates to add to the abundance of literature on the subject. Nevertheless it is thought that the following report is of value from the practical point of view.

A serious accident which occurred early in 1953 in the Mediterranean emphasized the problem of dealing with a large number of burns wherever they may occur; consequently it was considered that this was a suitable subject for discussion at the Royal Naval Medical School. With the approval of the Medical Officer in Charge, a preliminary meeting was held in Haslar attended by: The Director of Medical Research, S.M.O. (S), Surgical Specialist, Pathologist, Chief Pharmacist and the S.M.O. *Indomitable*.

At this meeting an eyewitness account of the accident was given by Surgeon Lieutenant Commander Gunson, Senior Medical Officer of the ship concerned. A severe petrol explosion had occurred due to a leak in the petrol system and this was followed by a fire which was soon brought under control. The force of the explosion was such that a watertight door was blown through and twisted like a piece of paper and a 3 ton bomb hatch cover was torn from its clips and hurled three feet into the air. The casualty list included three killed outright, one compound fracture right tibia and fibula in addition to severe burns, one perforated wound in the right frontal area and thirty six flash burns nearly all extensive second degree. The first aid treatment mainly directed toward intravenous therapy and treatment of shock consisted of morphia injections in half grain doses (repeated in 2 cases), transfusions of plasma and covering the patients with towels obtained from the central store. As the ship was only a few hours steaming from hospital no attempt was made to give any other treatment in the ship. In the event of the ship being more than twenty four hours away further treatment would have been necessary and would have exhausted the ship's supplies in a very short time.

In the discussion which followed consideration was given to the first aid treatment on board, methods of transport, resuscitation and methods of treat-

[illegible] Ready [illegible] types of stretchers were also [illegible] generally [illegible] of 30 or 50 [illegible] the American [illegible] advantage in dealing with [illegible] burns. The C[illegible] [illegible] that in future morphia would be supplied to the service [illegible] in monojets only. It was generally agreed that [illegible] morphia would be inadequate in such cases as these, and it would have been [illegible] in use two or four monojets for each patient. It was reported that [illegible] dressings were not available. The Surgical Specialist said that [illegible] in wide by 8 yards long are easily prepared and sterile in bulk [illegible] and should be readily available.

Reports had been received that some difficulty arose in cross matching after the use of Dextran. The Pathologist stated that with experienced hæmatologists the difficulty could be overcome but it was agreed that when possible blood specimens should be taken from all patients for future cross matching *before* any type of transfusion is given.

Transporting the cases to hospital presented many difficulties. On return to harbour the ship could not come alongside consequently all patients had to be manhandled. The men were burned on the legs, arms, faces and upper part of the trunk. Neil Robertson stretchers are unsuitable for this type of casualty and patients were placed on Army stretchers with the "two blanket" method, the whole being secured by a folded bedcover passed round the patient and stretcher. Owing to the flare out of the flight deck it was not possible to use the crane consequently it was necessary to carry each stretcher down a long ladder to the boats waiting below. This manœuvre was complicated by the fact that sixteen had intravenous drips running when they went over the side. Surgeon Lieutenant Commander Gunson is strongly of the opinion that the U.S. Navy Litter would be much more suitable for transporting severely burned patients and this was supported by the S.M.O. (8) and the Surgical Specialist. In view of the constant danger of explosion and fire in aircraft carriers it was suggested that special consideration should be given to the supply of suitable dressings, stretchers, stores and equipment in these ships and it was also suggested that a supply of emergency stores should be readily available for transportation by helicopter.

On the 11th September a general meeting of medical officers in the Portsmouth Command was held at the Medical School when the subject of burns was discussed and a film on the physiology and use of Dextran was shown. At this meeting Surgeon Lieutenant Commander Gunson again described the accident in his ship and how he had dealt with the casualties.

Surgeon Commander Murchison who had been Surgical Specialist in Malta gave the following account of the reception and treatment of the casualties in hospital. The original signals indicated that approximately 30 to 40 beds would be required for the casualties. The ground floor ward nearest to the theatre and the one immediately above it on the next floor was cleared of patients. The wards were heated by diverse means: coal, electricity and paraffin. Transfusion sets were mustered and large quantities of tulle gras were

it up from the store It was decided to divide the work of dressings in the two theatres between three teams two in the main theatre and one in the minor Each team was made up of two medical officers one sister one V A D and one O R A Two medical officers were detailed to attend to intravenous therapy The Sick Berth Staff Dining Room adjacent to the landing stage was heated to receive casualties on arrival

Transportation

Thirty five casualties arrived by sea at the hospital landing stage in two trips, and were carried to the wards It is felt that in all such casualties the minimum amount of handling is essential and in the incident under discussion a shuttle service between the ship and St Angelo or Calcara with ambulances from there to the surgical Block of the hospital would have been preferable A few months after the explosion another accident happened in which 20 men were seriously burned They were transferred to Bighi by ambulance without any difficulty Transport of casualties by helicopter between the ship and the hospital would probably have meant completion of dressings and initial treatment three or four hours sooner

Assessment

At first it was intended to give a rough assessment of the patients on arrival but it is contended that it takes almost prophetic wisdom to assess the burns case with any degree of accuracy A clear cut line can usually be drawn between the obviously satisfactory patient and the doubtful one on clinical grounds

Dressings

The first two cases in the theatre were cleaned with meticulous care and dressed with penicillin powder tulle gras gauze wool and crepe bandages In the face of so many casualties it was however reluctantly decided to rush through the dressings much more quickly removing dead tissue but not meticulously dealing with every speck of doubtful viability All dressings were carried out on roughly the same lines There were insufficient crepe bandages to cover all some had wool and gauze bandages combined Dressings in the theatres went on for six hours On the whole the patients did very well but the first two who had the meticulous attention were definitely a lap ahead of the rest later on The combined dressings were in no way akin to the absorbent pressure dressings popularized in America but a modicum of pressure was applied where practicable

Anæsthesia

Almost all the cases required an anæsthetic and this was mainly in the form of intravenous morphia with oxygen inhalation

Nursing

The nursing of most of the patients proved a most difficult problem With their arms and hands and some with their necks and backs involved the question of moving them to comfortable positions in bed required a good deal

[illegible] handling and of course [illegible] became entirely a matter [illegible] off. The [illegible] drying time for the nursing staff seemed to be [illegible] 8 and 10 p.m. At the hour if one patient [illegible] the restless and noisy [illegible] quickly there was a distinct danger of the remainder of the patients taking up the chorus. When this occurred it was extremely difficult to stop it. Various sedatives were used and although morphia should be avoided as much as possible in burns it had in be employed on occasions. Luminal was found very useful.

Redressings

Several areas had to be redressed in the wards where bandages slipped or became loose.

The first major dressings in the theatre were carried out after a week and the majority of areas redressed as in the original dressings with possibly an increase in general pressure. Some hands were left exposed but as will be seen from later remarks this was probably an error.

From the very beginning all faces and ears were left exposed and treated with benzyl penicillin but when the patients complained of pain in their ears or noses or foreheads a layer of tulle gras proved more soothing.

Progress

The area of body surface involved in these burns ranged from 25 per cent to 95 per cent with approximately 60 per cent of the patients above the 50 per cent mark. The progress is therefore rather remarkable and considering that only 25 per cent of the patients required skin grafting the depth of burning was in the majority of cases extremely superficial. At first all one could see was a host of blackened faces, arms, legs and bodies only remotely resembling human beings but when after ten days or so this black layer began to peel off the superficial nature of the burn became apparent. Here it should be noted that stripping off an eschar before it has completely separated is liable to produce bleeding with further scab formation and damage much deeper than the actual burn had produced. This is particularly important with fingers although sometimes a hard unyielding scab may have to be divided if it is producing a constricting effect. Injudicious scab removal from an ear may eventually result in the accusing shimmer from an exposed cartilage staring us in the face.

Split skin grafts of postage stamp size applied on tulle gras with pressure dressings were supplied to those requiring them between the fifteenth and twenty first days. Direct excisions were not carried out but the granulating areas were scraped down to their firm bases with punctate bleeding. Primary grafts took better than grafts applied late to areas of non take.

After the first dressing several cases were treated by the exposure method in a limited form. Legs and arms progressed very well with this method but at times the patients complained of being cold. This is a feature not observed in other clinics even with a lower ward temperature of 68° to 70°.

It was found impracticable to expose circumferential burns and strictly

speaking, the method was used for one surface burns only. In seven cases it was considered to be a most satisfactory procedure.

Chemotherapy

Penicillin 1 mega unit on admission and 300,000 units per [illegible] penicillin daily was given for upwards of three weeks depending on the case.

Feeding

A high protein diet was given to all patients. Sixteen patients had been given two pints each of plasma before admission but after admission Dextran was used exclusively and proved most satisfactory without any unpleasant reactions for those in need of further resuscitation. Some of these patients required intravenous fluids for two to three days. Whole blood was given to four patients before and during grafting operations.

Complications

"All patients were on carefully kept intake and output charts and only one showed a temporary suppression of urine.

"One patient had alarming attacks of paroxysmal apnoea and had to be treated with continuous oxygen. It was only when well-covered he had been told by a fortune teller before leaving U.K. that he would not return from the cruise that the correct treatment was instituted!

"One patient who appeared to be quite cheerful and comfortable died suddenly after twenty four hours. No post mortem was held and the scientific cause of death is open to conjecture. The suprarenals may have had something to do with it. Four patients died but their burns were exceptionally severe and widespread. One patient with 75 per cent burn and a compound fractured tibia and fibula died in the second week.

Investigations

Blood estimations and other biochemical data were not carried out owing to the pressure of work with so many cases. This report is consequently lacking in scientific background but may have the merit of reporting the line of action taken on clinical grounds with satisfactory results.

"It is felt that the main advance in the treatment of burns is due to chemotherapy and intravenous infusions with whole blood, plasma or Dextran. If the patient can eat a high protein diet should be given and his excretion should be watched with carefully kept intake and output charts.

A few months after the first major accident 20 commandos crashed in an aircraft at Luga and were brought to R.N. Hospital Bight. Their burns were not as extensive as those in the *Indomitable* and affected mainly arms and forearms, but the depth of burning was greater. All except one made a good recovery but five arms had to be grafted and the results were most satisfactory.

Surgeon Commander Mutchison continued by giving the following few

impressions gained from discussing the question of burns with some of the present-day British authorities on this subject at recent conferences.

Assessment of Burns

It is generally agreed that the depth of a burn cannot be assessed in its initial stages, but it should be more apparent after a period of seven days and ready for surgery in fourteen to twenty-one days. It may well be that in a few years time radio-active isotopes will be of help in this field.

Treatment

Excessive mild handling is detrimental to patients within the first forty eight hours.

In the treatment of shock, as a rough guide, the patient should have 1 c.c. per kilo per cent. burnt area of electrolytes and the same amount of colloids for twenty four hours, and then half this amount for a few days only. High protein diet and fluids by mouth should be encouraged at the same time.

To prevent clotting Invose (Bengers) has been found better than glucose, but while the above authorities did not mention it, there seems no objection to heparinizing each pint of infusion.

Chemotherapy

Opinion seems divided on this subject but giving penicillin appears generally more feasible than withholding it, and is certainly essential for grafting if only systematically, if any existing organisms are sensitive.

Neomycin has been lauded but is not yet on the open market.

Indications for Intravenous Infusions

Blood estimations are the only real guide but as a rough clinical guide if the pulse is going up more fluid should be given.

Intake and output checks are of the utmost importance.

The temperature of the treatment ward even when areas are exposed should be between 68 and 75° F.

The cubicle system of treating burns would be of great advantage in our naval hospitals and each cubicle should have independent oxygen heating arrangements.

Local Treatment

All areas above the neck should be left exposed and treated with lactose penicillin in limited quantities.

Hands and fingers should be covered and each finger dressed individually. The dressing should be moderately firm but not a pressure dressing. Dressings should be left undisturbed for seven days. At the end of this time a fresh dressing or skin grafting can be decided on.

Circumferential burns of arms or trunks should be covered with dressings such as tulle gras (easy to remove later) followed by moderate pressure and absorbent wool.

If one surface only is involved exposure is the line of choice It is pointed out that pressure dressings may prevent œdema of the area if tight but will produce œdema beyond the confines of the dressing If injudiciously applied it may be distinctly dangerous and may well imperil the viability of a limb Its popularity appears to be waning mainly because of its dangers There appears to be no objection to a dressing such as tulle gras gauze wool and crepe Limbs should be elevated to heart level Skin grafting should be carried out as soon as the degree of burning is apparent

This short account may help to show that simple surgical treatment of the local wound called a burn with meticulous attention to the bacteriological and biochemical side of the problem, will serve a better purpose than arguing about the merits or otherwise of the various methods of local treatment to the exclusion of the body reaction as a whole

It is considered that for first-aid treatment methods should be employed which have no risk attached to their application Injudicious exposure or pressure dressings might well lead to disaster

So far it is considered that nothing has been introduced to replace chemotherapy tulle gras, wool and bandages (preferably crepe) with of course emphasis on the treatment of shock and the patient as a whole

In this respect the excellent and arduous work performed by the handful of medical staff in H M S *Indomitable* was the source of admiration when the casualties arrived in R N H Malta To have covered even with clean towels 35 casualties given all injections of morphia and given 16 patients 2 pints each of plasma was no mean feat It is easy to carry out such work in a hospital but in a ship it is a different matter Without their work we would not have had so many patients to treat

Surgeon Captain Keating had the following comments to make

'(1) *The Problems Involved* Two quite distinct and separate problems are involved—they are (*a*) the immediate treatment of casualties arising in a ship and (*b*) the definitive and deliberate treatment of the same patients in hospital or hospital ship at a later date

(2) The problem posed by the immediate treatment of large numbers of burned patients in the confined spaces of a ship is peculiar to the Royal Navy in that the other Fighting Services are apt to think in terms of relatively small numbers being involved—the crew of a tank or aircraft, whereas in the Navy and particularly in aircraft carriers we have to think in terms of scores or hundreds of cases arising simultaneously and having to be dealt with by a limited staff under seagoing conditions

(3) Requirements at sea particularly in aircraft carriers are (*a*) Adequate space readily accessible both in the sick bay and in the adjacent compartments which should be planned so as to be rapidly converted to sick bay use in an emergency (*b*) Adequate illumination with points for wandering leads and provision for secondary lighting (*c*) An adequate supply of sterile dressings packed so that they remain sterile These to be stored in the sick bay or

adjacent [illegible] to be readily available (*d*) A readily available supply of fluid for intravenous therapy

(4) Primary (immediate) treatment should be confined to (*a*) *Alleviation of Pain* (tubunic morphine ½ grain and ½ grain to be available as well as ¼ grain (*b*) *The prevention of shock* necessitates the use of Dextran or other ready use intravenous fluid Supplies to be adequate (scale of 3 per cent of ship's company) and to be stored where it is immediately available. The quantity to be given to be estimated rapidly by such quick method as Hammerschlag's (*see* Appendix A) (*c*) *Prevention of Sepsis* Whatever local treatment finds favour the prevention and control of sepsis by chemotherapy will be necessary

(5) *Local Treatment* It is suggested that Ambrine should be given a trial This provides a sterile protective wax envelope which yields to gentle tension and does not, therefore constrict the circulation in cases of circumferential burns Moreover, it renders the handling of those whose trunks are burned circumferentially relatively simple and makes it possible to use the Neil Robertson stretcher in such cases It also tends to reduce loss of body fluids by exudate as contrasted with massive absorbent packs which tend to encourage fluid loss by absorption (*see* Appendix B for description of Ambrine) Cooper Pendleton's paraffin wax (which contains soluble sulphanilamide) was used with some success in the U S Navy to paint burns sustained at Pearl Harbour

Product N a tanning agent which is produced by Tidebrook Chemical Products also merits a trial and will be tried in such cases as arise in R N Barracks Portsmouth The literature however tends to suggest that those cases in which it has been used do not compare in extent or degree of severity with those which occur for example in a petrol fire Memories of the failure of tannic acid and other coagulants make one chary of recommending their contradiction particularly for circumferential burns of the limbs, hands or fingers (*see* Appendix C)

(6) Reference to assessment of extent and degree of the burn has been intentionally omitted as early and inexperienced assessments are invariably wrong and even experts tend to minimize extent and degree What is more important is that shock should be prevented and that when it does occur it should be detected early and treated suitably

(7) *Transport of the Patients* It seems to be a pity that the old naval cot still in a tray for slinging patients over the ship's side has gone out of fashion Some medical officers seem never to have heard of it yet it is by far the most safe and comfortable method and is believed to be still an item of naval stores

Provision of gear for the hoisting of the cot over the side and the provision of the trays (at least two—one to be near the sick bay) complete with tackle and steadying lines and so on are a matter for the ship as is also the frequent exercise of hoisting out patients Only by frequent exercise are snags discovered and efficiency gained

Specially designed hospital boats, protected from the weather should be available in home and foreign ports These should, ideally, be well

lit and heated with large hatches and doorways. Burned patients particularly need protection from the elements.

(8) *Definitive treatment* in hospital or hospital ship. This is generally agreed upon as the preparation of the patient for early skin grafting to areas of total skin loss and whilst exposure treatment has its advocates for certain areas (particularly the face) it is thought that immersion in saline or other baths has a permanent place in the preparation of such patients, particularly those with large sloughs and that this form of treatment is unlikely to be superseded.

'(9) It is thought that every naval hospital should have a large ward (40 to 50 beds) set aside for the reception and treatment of burns and annexed thereto should be an installation of saline baths thermostatically controlled on the scale of (say) one bath to ten beds. These wards and annexes should be air conditioned to reduce the bacterial content of the air and to control the temperature. Oxygen should be supplied and metered to the beds as was done for the Normandy D-day casualties at Haslar.

'(10) *Staff.* A proportion of medical officers and staff should be trained in the reception and treatment of burned patients and earmarked for such special wards when the emergency arises—as it often does at very short notice. Only by some such provision could a naval hospital deal with the arrival of a large number of burned men with that efficiency which is shown in other respects.

Several other medical officers took part in the discussion which followed and it seemed to be generally agreed that:

(*a*) First aid treatment as carried out (morphia, covering with clean towels and setting up plasma drips) was excellent.

(*b*) A supply of American type burns dressings would be an advantage.

(*c*) Paraffin gauze dressings in long strips should be available.

(*d*) Morphia in half grain monojets should be available as well as quarter grain monojets.

(*e*) The U.S.N. litter has many advantages for transporting severely burned patients.

(*f*) Exposure treatment has many advantages and pressure dressings also have their place in treatment; no hard and fast rules could be laid down.

(*g*) All hospitals should have at least one ward which could be heated to the requisite temperature; with oxygen laid on and drip stands readily available.

APPENDIX A

The specific gravity of blood may be tested by Hammerschlag's method. A mixture of chloroform and benzol is made of sp. gr. about 1055. A drop of blood is dropped into this. If the blood sinks its sp. gr. is higher than 1055. If it rises to the top it is lower than 1055. By adding more chloroform the specific gravity of the mixture is raised by adding benzol it is lowered. When the drop of blood is suspended in this it neither sinks nor rises its specific gravity is that of the mixture of chloroform and benzol. This may be measured with a urinometer.

APPENDIX B

AMBRINE

Treatment of Burns

Formula

Neutral Paraffin No. 58	96 grammes
Caoutchouc	2 grammes
Gutta percha	2 grammes

In 100 gramme slabs

Ambrine is used in a liquid state (158°–176°). A sufficient quantity should be placed in a suitable vessel upon a water bath until liquefied when it is ready for use.

Great care must be exercised not to allow any water to splash into the dressing. Ambrine is anhydrous and at the temperature used will not cause burning, but should water be allowed to mix with it a distinct sensation of burning will be felt.

The part to be treated should first be surgically cleansed and bathed with boiled water then *gently but most thoroughly* dried with cotton wool.

Spread the Ambrine over the part with a sterile camel hair brush without pressure that is dabbing it on—not brushing. Over this place a thin layer of cotton-wool then brush on several more applications of Ambrine. Do not apply cotton wool directly to the wound; apply a layer of ambrine first.

If the surface is extensive, the operation is done on convenient squares (about 4 in. × 4 in.) successively connecting the squares by the application of Ambrine.

Complete dressing with cotton-wool and bandages.

To remove the dressing the Ambrine shell is incised with a blunt knife or scissors which the dressing will easily peel off. After removing the shell bathe the parts with boiled water, dry gently but thoroughly with cotton wool, taking care not to rub or cause the granulations to bleed, and on the dried surface place a fresh dressing as before.

The shell should be renewed once every twenty four hours for the first few days, by reason of the abundant secretion of lymph which takes place underneath it. As this exudation begins to diminish the dressing may be left in place forty-eight hours or even longer.

Normal saline should be observed where possible but no strong antiseptics should be used and exuberant granulations should not be cauterized with any caustic agent.

No anxiety need be caused by any grey appearance or fœtid odour which emanates from the wound when the dressing is removed. After washing it will be seen that beneath the purulent fluid the tissues present an intense vitality and healthy appearance.

Ambrine may also be sprayed on the affected area by means of a jacketed paraffin spray such as the De Villbiss No. 110.

For emergency use Ambrine is issued in the form of candles, the wick of which is lit as with an ordinary candle and the dressing allowed to drip down upon the affected part.

APPENDIX C

N.—A new preparation for local application in burns particularly with the open treatment.

The product consists of a sulphonated condensation product of Formaldehyde and Cresol suspended in methyl cellulose to make it viscous and adherent. It is the consistency of thin honey. If N is painted on a fresh untreated first or second degree burn locally pain is abolished and blister formation is cut down to a minimum. After about fifteen to twenty minutes the solution dries and there is left a supple film which does not contract. N does not adhere for any length of time to normal skin so that the burnt area is rapidly delineated. The burn can then be treated as an open case, the method on the principles sponsored by Wallace in Edinburgh. Suitable antibiotics are administered and the patient can be allowed to go home without any form of dressing. By these means the burn is left exposed to air but because of this protective film pain and irritation is prevented and it will be found that no significant clinical infection occurs.

THE PROBLEM OF HEADACHE

BY

Surgeon Commander M A RUGG-GUNN R N

Born in the sick bay of ships and establishments and in the medical E N T psychiatric and ophthalmic out patient department of naval hospitals the problem of headache ranks high and frequently presents a most difficult diagnostic puzzle The object of this paper is to review some aspects of this very common symptom rather than to catalogue systematically the numerous causes and diagnostic procedures which may be necessary in each the case

Clearly a detailed history and complete physical examination together with any requisite auxiliary investigations must be undertaken in every case where the cause of the trouble is not immediately obvious This should include the duration of the headache whether it is constant or paroxysmal increasing or stationary relieved by anything or provoked by anything it coming with special reference to the night and the association of visual aural or vital symptoms including vertigo When the physical examination is conducted special attention should be paid to the fundi sinuses blood pressure and urine

Physiology

There is a diagram advertising a popular remedy depicting a head with the brain outlined and which frequently appears in the daily journals and periodicals The caption explains the amazing fact that only certain parts of the inside of the head are sensitive and those in abnormal state with nerves From a scientific standpoint it is grossly inaccurate but it serves to remind us that within the head there are highly sensitive and complicated nociceptive structures Broadly speaking the scalp periosteum venous sinuses dura at the base of the brain arteries of the scalp and the fifth ninth tenth and upper cervical nerves are sensitive whilst the cranial bones with their cells by contrast pia arachnoid and entire cerebrum and cerebellum with their vessels are insensitive

It stands to reason therefore that in order to produce pain these structures must be stretched displaced or otherwise affected It is always useful while spending some time finding out what exactly the patient means by the term headache Very frequently and especially in the functional group of cases pain is meant but rather a sense of pressure on the vertex or a tight band or even a stiff neck

Allen (1951) in a very interesting paper on the differential diagnosis of headache gives the origin of headache in a group of 1 000 cases and they make interesting reading Anxiety states and hysteria account for 217 depression and cyclothymics for 207 migraine for 241 head injuries 70 hypertension

12 and [illegible] The [illegible] [illegible] the [illegible] taken [illegible] [illegible] rarity [illegible] tumour.

The [illegible] mecks [illegible] to produce [illegible]

Neuralgia. These may [illegible] inside [illegible] pattern as headache. [illegible] [illegible] there are [illegible] distribution of the nerve which may [illegible] algesia [illegible] occasions the [illegible] zone. The aetiology of [illegible] occasionally [illegible] cervical spine may be present [illegible] mechanism affecting the [illegible] cause [illegible] found treatment [illegible] effect [illegible] vasodilator such as [illegible] two is always worth trying.

Much more difficult are the [illegible] pain may last some days and where [illegible] pain. It has been suggested ([illegible] 1941) that [illegible] group and should be treated accordingly.

In this group may be included the [illegible] neck muscles as the following case shows.

A. Wren aged 22 was seen complaining [illegible] that what she really felt was a sense of [illegible] attachment of the spinal muscles [illegible] number of tender points could be elicited on pressure. [illegible] rubbing of the area led to prompt relief.

Referred Pain.—Under this heading [illegible] the eyes [illegible] viscera. Organic disease of the eye [illegible] may cause headache, but refractive error [illegible] recent article says quite definitely that migraine [illegible] nor will correcting them help migraine [illegible] to eye troubles. A similar though rather more [illegible] Friedman (1951) who says that although [illegible] for headaches in very few instances can the [illegible] ocular disease." These two respected opinions [illegible] contrast with the opinion of our patients suffering from headache [illegible] ophthalmologist to be seen in any hospital [illegible]

One does, however, see the occasional [illegible]

waking and [illegible] Some may [illegible] may also be [illegible] to keep [illegible] against [illegible]

What has [illegible] in the nose and paranasal [illegible] nasal headache is unusual [illegible] is that out of 4 796 consecutive patients [illegible] headache found to be due to nasal [illegible] may be intense acute sphenoidal [illegible] whilst ethmoidalis may give [illegible] due to partial absorption [illegible] indeed they exist

Taken by and large [illegible] than is generally supposed [illegible] is not obvious washing [illegible] afford relief

Broadly speaking [illegible] gestion such is coughing [illegible] these headaches

Headache may [illegible] is that this is a reflex [illegible] trigeminal nerve is the [illegible]

The first thing that [illegible] stipation The author early [illegible] at school he had been [illegible] unwell and went along [illegible] headache administered [illegible] headache was promptly relieved [illegible] mind and are apt to [illegible] ache was regarded as [illegible] (1952) suggests that the [illegible] by discussion of the [illegible] stuffing the rectum with [illegible] patients constipated [illegible] the daily bowel [illegible] stipation leads to [illegible] headaches and constipation [illegible] probably due to [illegible] rectum One cannot [illegible] proprietary preparations [illegible] constipation Within this [illegible] so frequently [illegible] doubtedly helpful [illegible]

Meningeal Headache In Mr [illegible]

R.N. [illegible] one day about noon saying he had a stiff neck. He had [illegible] physical course there were no abnormal signs. He was put to bed and [illegible] signs of obvious meningitis was present and later that even [illegible] He was a typical cerebrospinal meningitis the meningococcus being [illegible] in the spinal fluid and he made an uneventful recovery except for a [illegible] slight nerve deafness.

The interesting point in this case is that he should have made a definite diagnosis [illegible] at the onset of the illness long before any signs were present. When [illegible] he said that he was quite certain he had meningitis [illegible] the headache was so severe that he knew it could not be anything else. [illegible] each step taken was sheer agony caused by the slightest jolting of the head.

He [illegible] emphasize the important fact that involvement of the meninges [illegible] is responsible for the most severe of all headaches. [illegible] point to remember when a patient [illegible] distance by ambulance.

The diagnosis of [illegible] meningitis is generally not difficult and a diagnostic lumbar puncture will [illegible] the matter, but chronic meningitis though more rare is a [illegible] puzzle. Syphilis is becoming rare, tabula is still [illegible] tuberculous meningitis is of the utmost importance. [illegible] usually the last symptom and may not at the outset be very [illegible] meningitis tends to increase as time passes. It has the [illegible] meningitis in that jolting, sneezing or jugular compression make it [illegible] frequently more marked at night. A lumbar puncture will help [illegible] but too much attention should not be attached to the [illegible] they may be lowered but they may be normal. [illegible] diagnostic guide.

[illegible] was admitted to Royal Naval Hospital [illegible] with a [illegible] headache and slight malaise. This temperature [illegible] There were no abnormal physical signs. [illegible] complained of frontal headache and his [illegible] Slight neck rigidity was now apparent and a lumbar puncture [illegible] chiefly turbid fluid containing 160 cells (mainly lymphocytes) [illegible] and chlorides 630 mgm. Tubercle bacilli were grown [illegible] of the chest showed miliary tuberculosis of the lungs. Specific treatment [illegible] up to the time of writing the patient has made a [illegible] recovery.

This case [illegible] the importance of observing a persistent and increasing headache and the diagnostic value of a low C.S.F. sugar in the early stages.

Most cases of subarachnoid hemorrhages are easy the patient complains of a violent headache and rapidly passes into coma. A slow leakage is more difficult but its presence may be suspected if the headache is severe and radiates to the occipital neck and spine or if it is associated with third or fifth nerve lesions. Again it is of some importance is arteriography may show up the aneurysm and successful surgery may manage to obliterate it.

The Headache of Hypertension. [illegible] duced by [illegible] mechan[illegible] uraemia [illegible] pressure [illegible] pressure. [illegible] Hypertension [illegible] the blood pressure [illegible] may therefore be ab[illegible] marked in the young [illegible] frequently maximal [illegible] day. Severe headache [illegible] hypertension.

In 1946 a man aged 7[illegible] of increasing headache [illegible] been somewhat delayed [illegible] since childhood and had an asthma [illegible] or relevant history. He was [illegible] and discharged to home [illegible] unless hypertension.

In March 1953 he began [illegible] dyspnoea [illegible] of the ankles in the evening and in September 1953 he was [illegible] with congestive failure and a blood pressure of 215/160. [illegible] He rapidly improved with digitalis and [illegible] and then [illegible] to take the strain off his heart by lowering the blood pressure [illegible] hexamethonium and apresoline. The blood pressure fell [illegible] oedema increased and headache was apparent [illegible] at night. It became obvious that hypertension [illegible] patient and were abandoned whereupon the [illegible] and the headaches and oedema went.

This patient was quite free from headache [illegible] blood pressure was lowered and it disappeared as the pressure [illegible] height in other words the pain bore an inverse relationship [illegible] It is almost certainly due to increased water retention [illegible] the points mentioned above.

Histamine headaches have [illegible] in the medical press. The subject was studied by P. [illegible] (1[illegible]) and recently by Eszenyi Halasy (1949).

The latter says that it occurs in paroxysms [illegible] confined to a circumscribed area on the same side [illegible] and [illegible] is

[illegible]

[illegible]

[illegible]

[illegible] ology or some similar [illegible]. Many sufferers notice that [illegible] premonitory [illegible] an attack. The attacks tend [illegible] opportunity seldom [illegible] [illegible] headache follows [illegible]

Like [illegible] it may or may [illegible]. In the third group is digestive [illegible] examination [illegible] the question of [illegible] make the [illegible] common [illegible]. When [illegible] like sleep of the [illegible] keep [illegible] there is a good chance that [illegible] sufferer from migraine should understand this.

[illegible] personal story may be allowed to illustrate this point.

One morning it was clear that [illegible] attack of migraine was pending. It [illegible] gathered in force [illegible] thinking impossible and [illegible] out of the question. The [illegible] whilst I crept up to my bed and got to sleep. Just after [illegible] the second time [illegible] thought I had taken [illegible] and departed [illegible] 12 p.m. [illegible] and the symptoms were then finished. The point is that had it [illegible] and go to sleep the head [illegible] would have been [illegible]. Unless [illegible] suffered from migraine it is difficult to appreciate [illegible] are, the headache [illegible] until the storm has passed.

Occasionally, and especially when migraine comes on later in life, it may be symptomatic of other disease. Certainly hypertension can on occasions present as classical migraine, though I have had the impression that the symptoms of spasm [illegible] hemianopia and pareses are never as dramatic as in the idiopathic group. Aneurysms and angiomas on occasion cause migrainous headaches, and [illegible] head injury may initiate them. The diagnosis of migraine is not always easy in atypical instances, the pain is frequently bilateral and the prodromata may be absent. If the pain is strictly focal and central about the eye it may be difficult to distinguish from sinusitis and supraorbital neuralgia.

Finally one sometimes meets recurrent but transitory paresthesia, weakness or aphasia without much headache, and the problem of a pending thrombosis or disseminated sclerosis may arise.

A well-known authoress [illegible] is a life-long sufferer from migraine, and did the round of Harley Street, not to mention chiropractors and the like to boot, in an effort to obtain relief. Her account of this makes amusing and perhaps instructive reading; everyone started with enthusiasm, various modifications of former treatments were tried, but without success.

[illegible] to explain the mechanism of the cerebral [illegible] [illegible] to subsume [illegible] like the [illegible] [illegible] the blood [illegible] further [illegible] precum further attacks but [illegible] something [illegible] inconvenient and [illegible] napping they [illegible] and will probably [illegible] as life enters [illegible] All [illegible] small comfort but [illegible] the patient [illegible]

[illegible] taken only in an attack give relief they are [illegible] a period of warning is necessary about [illegible] hemiplegia from this cause. Phenobarbitone [illegible] ps some but [illegible] the impression that the true migraine [illegible] typical cerebral [illegible] he is helped very little. A time-[illegible] Occurs must [illegible] As in the other cerebral headaches are [illegible] but if this is persisted in for a space of some weeks [illegible] chemical [illegible] immediate relief. Ergotamine can [illegible] relief. There are various ways of giving it [illegible] 2 mgm and caffeine 200 [illegible] necessary in half an hour and an [illegible] minimum [illegible] hourly should not exceed 10 mgm.

[illegible] Oldham [illegible] complaining of haematuria of a week [illegible] a person with a blood pressure of 105/70. He [illegible] since childhood and had attempted [illegible] ergotamine tablets. The [illegible] 10 or 12 mgm a day. He had [illegible] Urinary investigation [illegible] the haematuria ceased as soon as [illegible]

[illegible] toxic effects of ergotamine if not care[illegible]

[illegible] possible in an attack and for this [illegible] under Service conditions but pills [illegible] more effective if allowed to dissolve [illegible] 1 mgm may be given but nausea and [illegible] machines say they feel generally weak and [illegible] intravenous route which is sometimes recommended [illegible] with much misgiving. Recently dihydroergotamine [illegible] given by mouth in doses of 20 to 30 drops [illegible] from toxic effects.

[illegible] chiefly mentioning. Most sufferers benefit [illegible] from an increased intake [illegible] Nevertheless that too much of the [illegible] Most patients are helped if they can [illegible] a longer interval or more strenuous [illegible]

Migraine [illegible] fascular headache [illegible] well defined and merge [illegible] genic headache [illegible] associated [illegible] vomiting and [illegible] these cases may [illegible] trying [illegible]

Psychogenic Headache As the group merges into the [illegible] may be considered [illegible] out of 500 patients [illegible] of functional [illegible] describe insomnia [illegible] complaints and [illegible] times not marked [illegible] like wool or [illegible] band round the head [illegible] depressives and [illegible] ache acts as an [illegible]

In 1937 an Electrical Assistant [illegible] complaining of a dull thumping headache [illegible] signs and he was treated symptomatically [illegible] appeared again and asked for more pills [illegible] About an hour later he [illegible] hay and announced that 400 [illegible] Electrical Assistant [illegible] rapidly became worse lapsing into a coma [illegible]

It is amongst the middle [illegible] headache is most frequently found and may be the only complaint The patient's appearance and phraseology [illegible] headache is agony or blinding or is of the [illegible]

In them the [illegible] frequently holds down in persistence [illegible] individual is here in [illegible] harmony with his environment [illegible] sit and listen to the inevitable rule [illegible] as a sort of abreaction [illegible] After the clinical examination the negative [illegible] explained and the lack of structural disease [illegible] co-operation is sought—"You'll get well if you help yourself but if you don't help yourself I can't help you" [illegible] exercise is done in the morning before rising and [illegible] prescribed during which time the patient [illegible] part of the body go heavy and flaccid in turn A simple [illegible] completes the picture

I have often wondered with what enthusiasm the above exercises have been carried out by the patients for I have now advised them for many cases over a number of years but at all events it makes the patient an active partner in the

[illegible] collections of [illegible] symptoms [illegible]

though [illegible] All of same in [illegible] measure.

In view of [illegible] often [illegible] be thought [illegible] the C.S.I. [illegible]

In 1940 a [illegible] in the [illegible] fact that he [illegible] was of relatively [illegible] he had been [illegible] and rear orbital [illegible] skull showed [illegible] plate. He turned [illegible]

This case [illegible] there was every [illegible] gone headache [illegible] certainly have been [illegible] not found and [illegible] system headache [illegible] chiefly the injury [illegible] alone though [illegible] question of [illegible] of [illegible] piped [illegible] relieved [illegible]

Case C.S.I. P. [illegible] tested in Canada [illegible] 1952. In [illegible] alone (the C.S.I. [illegible] duty for the [illegible] and went to bed. [illegible] changes in personality [illegible] which resulted [illegible]

On 21st January [illegible] he could not [illegible] admitted to hospital.

Clinical examination [illegible] of from [illegible] B.P. 130/80. [illegible] bility of meningitis [illegible] punctures but [illegible] raised in Hicks [illegible] extract was given [illegible] he was discharged to duty on C.3.55.

This case shows the symptomatology and treatment management of low pressure headache a subject which has been recently fully reviewed by Page (1953) The matter is of some importance since a similar mechanism may be at work after spinal anaesthesia or after lumbar puncture, head injuries, cranial operations and in certain medical and neurological disorders such as diabetes insipidus narcolepsy and sodium depletion

The diagnosis is made with certainty by manometry though it can be surmised (as described above) by history There does not appear to be anything specific about the headache but it is often associated with giddiness and is made worse by movements of the head and changes in position Vomiting may occur (and be due to labyrinthine dehydration) and occasionally unconsciousness and dilatation of the pupils occur and blood pressure

After lumbar puncture likely to cause a sudden fall in blood pressure and spasm of injured cerebral arteries may lead to a diminished intracranial pressure of the C S F and thus a low pressure Without treatment the pressure can rapidly be restored by injecting 20 cc of physiological saline into the theca but it is seldom required as an intravenous injection of distilled water (30 c c) or saline is almost as effective but slower For the less acute cases which form the majority the treatment can be carried out on the lines mentioned above

Remarks—Headache is one of the commonest symptoms of which patients complain Here we attempted to list the individual causes of it one would make an infinity of most of the diseases of full mankind Certain aspects of it have already been dealt with separately under headings with brief notes on their treatment and in some instances illustrated by representative cases These headaches are seldom straightforward for the most part tend to converge into each other but they form a convenient basis on which to study an individual case Heredity early of eyes and sinuses and the frequency of vascular and psychological factors is stressed and the general arrangement of these groups is discussed

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A SURVEY OF THE STREPTOCOCCAL CARRIER RATE IN YOUNG NAVAL PERSONNEL

BY

Surgeon Commander P. K. FRASER, R.N.

From an epidemiological point of view the pathogenic streptococcal throat flora is limited to members of Lancefield's group A.

Group B the main cause of bovine mastitis is an occasional pathogen (Swift 1946). Allison (1942) in a study of upper respiratory infections isolated 128 streptococcal strains of which only one was group B. The monthly Bulletin of the Ministry of Health (1943) in a review of such investigations showed an incidence in the normal throat varying from 0·2 per cent. The Lancefield figure is a Canadian one (Plummer 1941). However in 157 strains of pathogenic origin this investigator found no B group organisms. About 50 per cent of group B strains are non hæmolytic.

Group C is responsible for most streptococcal diseases in animals but has been implicated in tonsillitis and puerperal fever. Scarlatina caused by group C pathogens does not appear to be followed by rheumatic fever although a raised antistreptolysin titre can sometimes be demonstrated (Cummins in Acute Respiratory Diseases 1944). Types 7, 20 and 21 of Griffith's group A belong to category C.

Group D comprises the enterococci and the human saprophytic group and is sometimes found in cheese. *Group E* has been recovered from milk. *Groups F and G* are occasionally found in saprophytic form in the human throat but can cause tonsillitis of a mild type. Type 16 of group A belongs to group G. The *H and K groups* are normally naso pharyngeal saprophytes while *L and M* comprise a group found chiefly in dogs (Hare 1935, Swift 1946 and Wilson and Miles 1946).

The incidence of beta hæmolytic streptococci in the throats of normal individuals has been reported as low as zero and as high as 100 per cent. The latter figure is from the older literature as received by Arnold (1920) and concerned only 13 cases. Hare's (1941) negative finding in 160 soldiers during a Canadian winter is unusual. Previously (Hare 1935, 1940) he estimated the carrier rate in the normal population at about 7 per cent. This corresponds to Lemon's (1947) figure of from 5–10 per cent. Bloomfield and Feldy (1935) in a study of a small nursing community during a non epidemic period found a positive incidence of 28·7 per cent. Of 1,902 healthy individuals examined Jane Bonn (1933) found 9·3 per cent positive throats. Over a period of 32 months she and her co workers found little change in incidence from season to season. The older age groups tended to have fewer positive findings.

[illegible]

[illegible] 1949c) [illegible] and especially [illegible] 1946) [illegible] (Schwendt 1[illegible] 1[illegible] 1964 [illegible] less and [illegible] two months in [illegible] tract It has been [illegible] Young 1949) [illegible] community [illegible]

Some time [illegible] of young men [illegible] of traditional [illegible] investigation [illegible] men and [illegible] for instance [illegible] has simple opportunities [illegible] ments [illegible] has paid [illegible] unfortunate [illegible] All such [illegible]

Initially the [illegible] cast from the [illegible] proud [illegible] izations [illegible]

The study [illegible] period Spanish [illegible] linkage with [illegible] group and [illegible] finally [illegible] the initial phase [illegible] in an [illegible]

To facilitate [illegible] given in the [illegible]

The [illegible] in Table [illegible]

TABLE 1

[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

infectivity rate as many organisms belonging to group [illegible] than A and several could not be grouped with the full range of [illegible] sera. Note of the recognized American virulent types (Coburn and Young, 1949d) 3, 17 and 19 were found but the following range [illegible] 11, 12, 18, 25 and 26. 33 of the 167 positive results. In [illegible] less hæmolytic streptococcal colonies on the culture plate [illegible] 100 per cent growth of streptococci.

Table II shows a small sample which was [illegible] grouping. A carrier

TABLE II

Sample distribution of Streptococci in [illegible] groups

Nos. of individuals examined individually	Number positive	Gp. A	Gp. B	Gp. [illegible]	Other
163	70	28	3	10	23
	(43%)	(17%)	(2%)	(6%)	(14%)

rate of 43 per cent reduced to 17 per cent when [illegible] group A organisms were considered. The number in group C is interesting. [illegible] for a [illegible] period in the spring, and were not found in [illegible] equipment. In Table III it will be seen that an overall carrier rate of [illegible] per cent fell to 10

TABLE III

Individuals swabbed on joining, and leaving

Number	No. positive on joining ship	No. positive on leaving ship	Original pos. with pos. term. swabs	Original neg. with pos. term. swabs
88	67	8	10	28
	(17%)	(10%)	(3%)	(7%)

per cent over a period of three months. Several of the original and terminal positives showed a change in type or group. Coburn and Young (1949e) [illegible] that the overall carrier rate is higher on board ship than in [illegible] establishments and this will be reflected in a falling carrier rate.

Summary

A [illegible] analysis showed an overall carrier rate of 25 per cent was found in a [illegible] undergoing naval training effort. Many of the organisms [illegible] of group A and in all the generally recognised American [illegible] were present.

No [illegible] of streptococcal infection were encountered during the twelve [illegible] of the investigation.

The carrier rate dropped to fall on transfer from the shore barracks to ship.

I am indebted to the Medical Director General of the Navy for permission to publish this report. Thanks are due to Dr. T. V. Cooper, County Pathologist,

Dorset in whose laboratory [illegible] work was [illegible] I would like to thank Dr R E O Williams of the Central Public Health Laboratory Colindale for undertaking the typing of the original and for checking the original grouping reports

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CLIMATE AND HEALTH IN WEST AFRICAN WATERS 1825-1870

BY

Commander P. AUBREY, R.N. (Rtd.)

In the summer of 1947 there appeared in a medical periodical an article bewailing the many problems encountered in looking after the health of the men of Britain's small little fleet in Europe far from any base and mainly in tropical waters. The expeditions of the African squadron of the middle of the last century have a strikingly comparable interest. The vessels of this squadron were small brigs mounting between 10 and 16 guns, slowly replaced by steamers towards the 1840 mark. They were divided into three divisions, one patrolling off the rivers north and south of Sierra Leone, a second in the Bights of Biafra and Benin at the head of the Gulf of Guinea, and the third off the Congo and west of Angola. The duty of all was the interception of vessels carrying slaves, equipped for the Slave trade.

Life on board these African cruisers was greatly influenced by the weather. The rainy seasons in the tropics of Sierra Leone lasts from June to September, July and August being the worst months. Further east in the Bights the rains are little milder. Outside the rainy season the weather is usually fine and hot. After several months, during which the heat, the seams of wooden decks would open up and the hot guns would cause mortification of cabins and lower deck. A Parliamentary Committee of 1842 heard a good deal about conditions in the 10 gun brigs, which were said to be well entitled to the nickname of flying coffins. Part of the evidence read:

> In a climate like all others where good and wholesome vessels with proper accommodation between decks and well ventilated cabins are required for the health and comfort of officers and crew, they are cooped up in small ill-ventilated small vessels without a single port between decks.

The officer's dress in this climate consisted of white duck jumper and trousers, the former being known as a duck. On medical advice flannel was always worn next to the skin, each man having four washbelts of this material. White straw hats, four inches of the same brim, so distinctive of women of the Royal Navy later in the century and right up to the First World War, were worn after a fashion. In the Niger expedition of 1841 orders were even issued that men were not to be allowed to go aloft unless their hats had first been packed under the crown with some additional defence against the sun. The men slept in hammocks below deck in proper ships but when serving in tenders or as prize crews they often had to sleep on the decks. When on detached service in the ships' boats they usually encountered the worst conditions of discomfort.

Boat service [illegible] still in the case [illegible] possible managed [illegible] They were on [illegible] on the mind caused [illegible] for mutual warmth [illegible] under at anchor off [illegible] work lay in the fever [illegible]

Boat service could [illegible] issuing instructions and [illegible] result from the experiment [illegible] away from the *Acorn* [illegible] a larger boat is [illegible] The officers in charge [illegible] the shore in no account [illegible] men from exposure [illegible] party discovered [illegible] robust health than when they [illegible] in the same area [illegible] stricken with [illegible]

By 1848 reasons [illegible] allowed his boats to remain [illegible] This restriction is still [illegible] of Commodore Sir Charles [illegible] first dated 3rd November 1848 [illegible] absolutely during the [illegible] the second issued in 1851 [illegible] detached from ships [illegible] prison of a suspected [illegible] to all rivers and [illegible] Unauthorised boats of the *Sirius* and [illegible] wise to the methods of [illegible] *Britomart* boasted in [illegible] been cruising for nearly [illegible] captain of the United States [illegible] *Waterwitch* captured [illegible] southern division without [illegible]

The cause of malaria was [illegible] surgeons to be rigours of the [illegible] onset hastened by fatigue [illegible] ing the exhalations from the [illegible] especially boats were [illegible] given the fever its name [illegible] connected the disease with the presence of the [illegible]

Hydrogen [illegible] 1840 Sir William Burnett Inspector General of Hospitals and [illegible] memorandum on this subject [illegible] medical officers of the [illegible] In it he directed the surgeon to examine [illegible] fully the [illegible] in order to detect the presence of sulphuretted hydrogen [illegible] for analysis were sent to the Admiralty where [illegible] effect of the chemical cement upon ships [illegible]

Sir William [illegible] in issuing the medical directions for the ill fated [illegible] 1841 observed that he was [illegible] that the inhalation of [illegible] is not alone the cause of fever Dr McWilliam [illegible] expedition thought it not improbable there were other agents besides the [illegible] generation

The agency of [illegible] is not in [illegible] nearly the end [illegible] The surgeon of the frigate *Dryad* in 1841 commented on the [illegible] Sir [illegible] Lemie of [illegible] these most [illegible] and Bryson whose [illegible] and [illegible] in the [illegible] the stomach [illegible] published in 1841 [illegible] the same spelling is used throughout [illegible] refreshing [illegible] Though he could [illegible] Dr Bryson admitted that bilge as regards [illegible] there was as much in the bilge as there [illegible] We [illegible] relative to the production of the fever [illegible] is forced after considerable experience [illegible] opportunities for discussion at all the principal [illegible] to the opinion to confess with regret [illegible] to put to counteract the deadly nature of the malady"

The only [illegible] in the number of fever cases were to [illegible] blanket dress [illegible] made frock and [illegible] introduced by Commodore Sir F [illegible] and the sudden night [illegible] of wine and bark This bark of [illegible] called Peruvian bark had been known for about a [illegible] fever and ague

Treatment [illegible] principle that the more severe the fever the more [illegible] Thus bleeding was invariably carried out coupled with [illegible] of calomel followed by other mercurial medicines [illegible] As more experience was gained bleeding was less [illegible] but blistering agents were often applied as counter irritants [illegible] of the neck

In the early [illegible] was derived from cinchona bark and was available in small quantities [illegible] only when the crisis passed the patient was already [illegible] and not always in these circumstances By the time of Bryson [illegible] quinine had become one of the necessities of life and was to be found in the houses of resident Europeans in almost every part of

West Africa. In the [illegible]

As early as [illegible]

Though [illegible]

It was thus [illegible] twenties [illegible] The vessel had arrived at Sierra Leone [illegible] May 1877 [illegible]

[illegible] in February 1830 that [illegible] Mckinnal [illegible] resumption [illegible] the men [illegible] as soon as [illegible] bringing [illegible] the [illegible] blank form provided by the [illegible] officers of the watch on the quarter deck [illegible] shared by all the watch [illegible] more than form [illegible] margin.

[illegible] with high [illegible] deaths on board men-of-[illegible] apply all too frequent. Deaths from all [illegible] between 1825 and [illegible] epidemic outbreaks of fever in 1828–1830 [illegible] *Sylph* [illegible] spread among many [illegible] 1845 [illegible] *Eclair* in 1845. [illegible] for [illegible] period from disease [illegible] than for any other [illegible] Wolverine [illegible] Smith Antelope [illegible] which were 0.98 [illegible] the annual mortality [illegible] the [illegible] disease the number of [illegible] of malaria in its victims [illegible] mainly from drowning [illegible] and [illegible] ashore and the rest [illegible]

[illegible] improvement in the health [illegible] Commission [illegible] report with unsigned [illegible] April 1854 [illegible] the sick rate from all causes [illegible] Bill [illegible] however to dispel the [illegible] of [illegible] sickness and mortality among [illegible] West [illegible] Commission [illegible] the House of Lords reported [illegible] members found no conflict of [illegible] general unhealthiness in the [illegible] Hotham and eight former [illegible] immediate Mortality had [illegible]

[illegible] Like the [illegible] of the Lords Committee [illegible] representative of the [illegible] including in September [illegible] officers and men by death in [illegible] officers of whom [illegible] work caused not by [illegible] important British trading [illegible] But opinion was by then [illegible] exposition of the dreadful [illegible]

Clinical Notes and Cases

A CASE OF ACUTE BACTERIAL ENDOCARDITIS OF THE TRICUSPID VALVE ASSOCIATED WITH ACUTE PHLEGMONOUS ENTERITIS

BY

Surgeon Lieutenant A. A. BARTHOLOMEW, R.N.

Acute bacterial endocarditis of the right heart is an uncommon condition and when associated with an acute abdominal illness (apparently typical of a Crohn's disease at operation) makes a case of unusual interest.

Case History

A single European male aged 17 was first seen on 2nd April 1951 when he complained of a sore throat, general malaise and fits of shivering. On examination he was found to have a raspberry red oedematous throat. The temperature was 101° F. and the pulse 110 per min. He was put to bed and treated symptomatically with gargles, aspirin, g. x t.d.s. and a saline draught. That evening his temperature was 99.2° F. and the following morning was 101.6° F., his clinical state being unchanged.

On 4th April he stated that he felt a bit better and that he had no more rigors. He did have complaint of some vague central abdominal pain. There was no nausea, vomiting, nor loss of appetite. On examination his throat was still inflamed, but no abnormal physical signs were found in the abdomen. His temperature had continued to swing between 99° and 102.4° F. and his pulse remained at around 110 per minute. His urine was clear and contained no albumin. No penicillin was delivered while on the Penicillin (sodium crystalline G) was prescribed and given as 100,000 units intramuscularly.

On the morning of 5th April the picture had changed considerably. The patient looked much more ill and had a marked malar flush. He complained of central abdominal pain in the R.I.F. and of slight constipation. On examination the temperature was still swinging and the pulse 140 per min. The physical signs in the abdomen were those of a typical acute appendicitis, namely tenderness both directly and on rebound, with hyperaesthesia and positive Rovsing's and psoas signs. There was also tenderness over the right lower quadrant of the abdomen and no mass was felt. On palpation of the rectum there was tenderness to the right side. Nothing else found on examination of the chest.

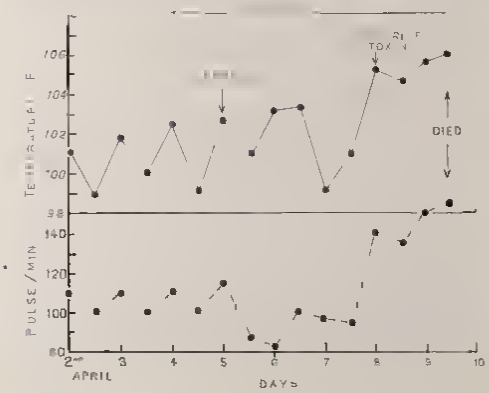
On admission to hospital the same morning the physical signs were recorded and a white cell count showed 9,700 cells per c.mm. with 77 per cent polymorphs. A diagnosis of acute appendicitis was made and immediate operation was considered advisable. It was performed within an hour or so of admission to hospital.

Operation

A grid iron incision was made and on opening the peritoneum there flowed slightly blood stained fluid was noted. The appendix was kinked and had but a few fine adhesions, the whole organ being inflamed. It was removed without difficulty. On further inspection it was seen that there was a thick raw lurking, [illegible] inspection of the caecum about 3 in. (7.5 cm.) above the ileocaecal junction and mesenteric lymph glands medial to the caecum were enlarged. No mass was felt in this, the whole wall of the caecum and ascending colon was thickened and oedematous with some

[illegible] bowel was inflamed from the [illegible] A hard granular mass was felt [illegible] The ileum was opened and the [illegible] ulceration was considered to be an [illegible] mycosis were present [illegible] tissue was thought to be enlarged [illegible] A slip to side a [illegible] serious drop and continuous [illegible]

[illegible] better. His temperature was [illegible] April (three hours after operation) [illegible] his pulse that had risen to 114 [illegible] On the morning of 8th April [illegible] 104.6 F and pulse to 146 [illegible] heard the boy [illegible] all the parent passed [illegible] early hours of 9th April [illegible] [illegible] muscularly



Blood [illegible] neither were found.

Post-Mortem Report

(1) *Ope[illegible]* [illegible] and [illegible] was seen. The [illegible] showed recent [illegible] congested lymph nodes [illegible] sections extensive [illegible] lymph infiltration [illegible] the infection [illegible] was seen in all coats [illegible]

(2) *The Colon* [illegible] during the ileum were enlarged [illegible] both macroscopically [illegible] charged and weighed 2·400 [illegible] appearance was that of [illegible]

The Caecum [illegible] lesion involved [illegible] weighed [illegible] hemorrhages [illegible] appearance [illegible] the larger intestine [illegible] logically [illegible] Sincerely [illegible]

Respiratory System [illegible] pleural cavities [illegible] The right side contained [illegible] lesion was demonstrable [illegible] of fluid [illegible] multiple small [illegible] diameter [illegible] the appearance [illegible] hemorrhagic [illegible] capillaries and small abscesses [illegible]

Endocrine System [illegible] showed congestion [illegible] one there was [illegible] The lungs of the central nervous and the [illegible]

(3) *Bacteriology* [illegible] plate grew only contaminants [illegible] coliform organisms [illegible] cells chiefly polymorphonuclear and occasional [illegible] after [illegible] colonies of coagulase positive *Micrococcus* [illegible] to penicillin and streptomycin. Numerous [illegible] The urine is sterile of the bowel stained with [illegible] Smears from the vegetations [illegible]

Discussion

The blood [illegible] through possibly streptococcal with [illegible] This would account for the swinging temperature [illegible] unlikely that the patient had a septicaemia at first [illegible] very well. The bacteremia then possibly caused acute [illegible] to a blood borne infection (Wakeley and Childs, 1950). The infecting organism next entered the submucosa of the

bowel and [illegible] and finally involved the terminal ileum, caecum and [illegible] gave rise to a phlegmonous enteritis. Following operation an infective [illegible] organism multiplied in the blood stream producing a septic [illegible] bacterial endocarditis that involved a normal tricuspid valve. [illegible] the very stormy and fatal post-operative course. The [illegible] that the histological picture of the bowel did not in any [illegible] with a Crohn's disease and that the lesion was an example of phlegmonous enteritis.

There are a number of interesting points to note in this case.

Phlegmonous enteritis is not mentioned in every pathology and surgical textbook as an entity, but when discussed it is described as an acute localized suppurative inflammation of the bowel most usually due to the streptococcus or various other pyogenic organisms. The infection is essentially a submucosal one and it spreads in this plane. It is stated by Muir (1941) to be most common in the ileo-cecal region. It seems to have first been described by Rukhansky in 1842 and termed by him enteritis submucosa suppurativa. Since then a number of cases have been published and the condition was reviewed by Clark and Wright (1937). They restrict the term phlegmonous enteritis to cases involving only the duodenum, jejunum and ileum and refer separately to cases involving the caecum and colon, these latter cases being very much more rare. The majority of cases they found involved the duodenum and jejunum, 34 of 41 cases. It appears to be more common in the male in the ratio of 3:1, the age incidence being spread over a period from the first to the ninth decade with a peak during the fourth decade. Pathologically the lesion is an acute inflammation of the submucosa typified by oedema, fibrinous exudate and gross polymorph infiltration. They state that there is no convincing evidence of haematogenous spread, though in some of their cases the abdominal condition followed illnesses such as pneumonia, scarlet fever and tonsillitis.

A number of authorities consider that there may be a close relationship between the acute inflammation already described and Crohn's disease. The acute stage of Crohn's disease is frequently diagnosed as acute appendicitis and it is only on performing a laparotomy that the terminal ileum may be found thickened, soggy and œdematous with numerous hyperplastic lymph glands (Crohn, Ginzburg and Oppenheimer (1932)). Here again the age incidence favours the young adult and the sex incidence the male. They state that the submucosa and to a lesser extent the muscular layers are markedly inflamed with hyperplastic and exudative changes. In some cases giant cells may be seen but are not essential to pathogenesis. Aird (1949) states that the acute stage may resemble acute appendicitis with peritonitis, the disease is frequently preceded by an attack of tonsillitis.

From this it would seem that these two diseases are not very clearly defined entities and may very possibly be the same thing. This view is suggested by Ramanis and Mitchiner (1944). The case described above would reasonably fit either description.

In the case described above the posterior cusp alone of an otherwise perfectly

[illegible] in the [illegible] of cases in which [illegible] deformity (Lucilius [illegible]).

The [illegible] very common [illegible] Bacillus [illegible] state. [illegible] both clinically and pathologically [illegible] mitral valve [illegible] of acute endocarditis [illegible] vary considerably. [illegible] the right heart alone [illegible] shown in the following table.

	[illegible]	[illegible]	*Involving the tricuspid valve alone*
Osler (1885)	—	[illegible]	5 cases
200 cases	[illegible]	[illegible]	(2 [illegible])
Preble (1904)	[illegible]	[illegible]	12 cases
141 cases	[illegible]	[illegible]	(8.5 [illegible])
Horder (1908)	[illegible]	[illegible]	Nil
118 cases	[illegible]		
Thayer (1922)	[illegible]	[illegible]	10 [illegible]
185 cases	[illegible]	[illegible]	5 [illegible]
Phipps (1937)	[illegible]	[illegible]	[illegible]
44 cases	[illegible]	[illegible]	14.8 [illegible]
Ford (1932)	[illegible]	[illegible]	[illegible]
23 cases	[illegible]	[illegible]	(8.6 [illegible])
Ruegsegger (1938)	[illegible]	[illegible]	[illegible]
15 cases	[illegible]	[illegible]	(6.6 [illegible])
Goldburgh *et al.* (1942)	[illegible]	[illegible]	20 cases
646 cases	[illegible]	[illegible]	(3.1 [illegible])
Luston and Smith (194[illegible])	[illegible]	[illegible]	Nil
20 cases	[illegible]		
Spies *et al.* (1951)	[illegible]	[illegible]	2 cases
9 cases	[illegible]	[illegible]	(2 [illegible])

(1) These series marked [illegible]
(2) The two cases of Spies [illegible]
(3) The series of Phipps [illegible]

An examination of these [illegible] in 152 of 1,201 cases [illegible] 12.6 per cent. If the figures for right heart involvement [illegible] endocarditis are similarly [illegible] 83 cases in a total of 199—an incidence of 41.6 per cent.

The figures for involvement [illegible] difference. The general incidence [illegible] of 1,401, 5.5 per cent. In the pneumococcal [illegible] incidence of 10.5 per cent. The only [illegible] has a similar set of figures: the general incidence [illegible] of 1,401, 3.8 per

cent., whilst the pneumococcal series shows 13 out of 199 an incidence of 7.5 per cent.

It is apparent therefore that the pneumococcus attacks the right heart and the tricuspid valve more frequently than any other organism. In the figures reported by the various authorities for acute endocarditis caused by all organisms there are undoubtedly to be found a number that were caused by the pneumococcus possibly something like 10 per cent (*vide infra*). If these numbers were known and were omitted from the totals the difference in incidence noted above would certainly be even more marked.

This difference in incidence is in agreement with the findings of Goldburgh *et al* (1942). Of the 646 cases reviewed by them there were 62 (9.6 per cent.) cases of pneumococcal endocarditis all related to lobar pneumonia. 9 of which involved the tricuspid valve alone. Thus 9 of the 20 cases of tricuspid involvement alone (see table) were pneumococcal that is 45 per cent. Of the 62 cases of pneumococcal endocarditis the 9 involving the tricuspid valve give an incidence of 14.5 per cent. Of the remaining 584 cases of acute endocarditis (non-pneumococcal) only 11 involved the tricuspid valve alone, an incidence of 1.8 per cent.

This conclusion that the pneumococcus attacks the right heart and tricuspid valve more often than any other organism is stated by Goldburgh *et al* (1942) and also by Preble (1934) who found evidence that the tricuspid valve was involved twenty times more frequently by the pneumococcus than any other organism. Thayer (1922) however produces figures that do not bear this out and suggests instead that the gonococcus is the most frequent cause followed by the staphylococcus and the streptococcus.

The case described above was very possibly of streptococcal origin but the failure to find any organisms in significant profusion on staining or culture was presumably due to the intensive antibiotic therapy given. It is however virtually certain that the organism concerned here was not the pneumococcus.

With regard to the diagnosis of this condition which in the case quoted above was made at autopsy, it is of interest to note the remarks of a number of authors who all mention the difficulty of ante-mortem clinical diagnosis (Keefer 1940, Lewis 1942 and Goldburgh *et al* 1942). Goldburgh *et al* state: "One thing that impressed us particularly was the unreliability of physical findings upon cardiac auscultation. In but 8 of the 20 cases was any mention made of any murmur being heard, and in none of these was it heard specifically over the tricuspid area."

The series quoted by Spies *et al* (1951) included 2 cases of tricuspid involvement alone, the diagnosis of which was made purely on clinical grounds. Both cases were cured with antibiotic therapy and thus were not verified at autopsy. The diagnosis was made on the grounds of a systolic murmur heard over the tricuspid area and multiple pulmonary infarctions. This in part agrees with Keefer (1940) who states that involvement of the tricuspid valve may give rise to few localizing physical signs but is a source of multiple pulmonary emboli. The above case proves the truth of these remarks.

Summary

A fatal case [illegible] acute bacterial endocarditis that involved only a normal tricuspid valve. The organism was never identified.

Associated with the [illegible] acute abdominal condition that at operation was thought to be an [illegible] Crohn's disease. It was later considered to be a phlegmonous enteritis. A consideration of a possible relationship of these two diseases is briefly discussed.

A brief survey of some of the published figures relating to the involvement of the right heart and of the tricuspid valve alone in acute endocarditis is presented.

Note is made of the increased incidence of right heart involvement when the responsible organism is the pneumococcus.

Reference is made to the difficulty of arriving at the diagnosis of tricuspid involvement clinically, particularly on cardiac auscultation.

My thanks are due to the Medical Director General of the Royal Navy for permission to publish this case. I should also like to acknowledge help received from the department of Pathology of the University of Capetown where the autopsy was performed, also to Surgeon Commander C. D. Coode R.N. for his helpful criticism.

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A CASE OF FAT EMBOLISM

BY

Surgeon-Commander W. WILSON, R.N.

The following case is recorded because it presents all the features of fat embolism following trauma.

Recently a [illegible] aged 21 was admitted to a Royal Naval Hospital [illegible] a motor-cycle accident.

He had sustained a fracture of the mid-shaft of the right tibia and fibula with a small piece of wound in the skin of the lateral aspect. X-ray showed comminution of the mid-shaft of the right tibia—the fragments had displacement. A tourniquet had been used, and had remained on for nearly the details of his accident. Other injuries included a bruised right shoulder, [illegible] the right knee, and slight bruising of the right eye. No evidence of other injuries was found in this case.

Reduction of the fracture and setting of the limb in a splint was performed in the late afternoon under general anæsthesia (Pentothal Co. O.). The usual reduction of the fracture was difficult and painful, and the limb was finally fixed in good position and the application of a plaster splint.

The recovery from the anæsthetic was normal but he needed to be [illegible] little drowsy.

First Post-Operative Day.—He was noted that the patient was somewhat drowsy, but he responded to questioning, and [illegible] Examination of the C.N.S. failed to show any abnormality. The circulation of the leg was much satisfactory.

Second Post-Operative Day.—Patient still somewhat drowsy, but responded normally to questioning. Examination of C.N.S. showed nothing abnormal. Pulse rate 160 per minute. Blood pressure 130/75. His drowsiness had [illegible] the [illegible] operation.

Evening—[illegible] There was a [illegible] minimal line petechial rash [illegible] of the neck, upper arms, and axillary folds and upper thighs.

Blood—Red blood cells 4,000,000 mm. C.S.F. [illegible] cells—less than 1 per [illegible] Platelets 40,000 per mm. Clotting time—normal.

X-ray chest—No evidence of bony injury.

Third Post-Operative Day.—Condition unchanged except for the petechial rash. Examination of C.N.S. again showed no evidence of localizing signs.

Pulse rate—160 per minute.

Temperature—104°.

Lumbar puncture—Pressure 290 mm.

Fourth Post-Operative Day.—Deepening coma.

Pulse rate—160 per minute.

Temperature—106. Respiration [illegible]

Lumbar puncture—320 mm. of C.S.F. C.N.S. localizing signs to be found.

As a last measure, digital exploration was made in the skull to exclude any remote chance of extra-dural haemorrhage, but none was found.

The patient died that afternoon.

A p[illegible] as follows

Skull [illegible] fracture [illegible]

Brain 63 oz [illegible] weight On section [illegible] hemorrhages up to 1 mm in diameter scattered [illegible] hemispheres and brain and cerebellum [illegible] just lateral to the [illegible] in the ventricles

Right lung 8[illegible] oz [illegible] hemorrhages on the [illegible] On section [illegible] was of a purple colour throughout

Left lung 47 oz [illegible] appearances [illegible]

Sections of the [illegible] lung [illegible] organs were filled with fluid blood

Discussion

Cushing and Patterson Ross [illegible] Brain [illegible] describe two types of fat embolism—the pulmonary type and the systemic type

Essentially the pulmonary type [illegible] with a raised respiration rate and [illegible] trauma quite quickly

The systemic type comes on [illegible] characterized by drowsiness [illegible] CNS [illegible] signs in the CNS A [illegible] on the first or second day and [illegible] to coma and finally death

It will be seen that the [illegible] very closely indeed It is interesting [illegible] trauma and that manipulation [illegible]

It is felt that many cases of fat embolism [illegible] pulmonary complications are frequently [illegible] cations In addition many cases of [illegible] trauma [illegible] signs may well be due to fat embolism

Reviews

Moore [illegible] 1954 A Yearbook of Treatment for the General Practitioner Edited by Sir Cecil Wakeley Bt KBE CB MD MCh DSc FRCS FRSE FRSA FACS FRACS 1954 Pp [illegible] 52 with 88 plates and illustrations London The Medical Press Price 21s 0d

[illegible]

Ophthalmology By J H Galbraith MD FRCS MRCS FRCP Professor of Pharmacology in the University of Edinburgh 4th Edition 1953 Pp 362 with 83 illustrations and 21 plates London Geoffrey Cumberlege Oxford University Press Price 35s 0d net

[illegible]

An Introduction to Gynaecological Practice By D Craddock MB ChB DObst RCOG With a Foreword by Sir Herbert Ogilvie 1953 Pp xv + 553 London H K Lewis & Co Ltd Price 42s 0d

With the foundation of the [illegible] College of Obstetricians and Gynaecologists it has become incumbent on one of its members to write the first textbook of gynaecology. Dr D Craddock's treatment of this the broadest if all subjects in the medical armamentarium leaves nothing to be

[illegible] In the 540 pages of text there is [illegible] the present-day general practitioner [illegible] everything from [illegible] pediatrics to gerontics and from the [illegible] the legal aspects of adoption

[illegible] within the scope of the G.P.

The [illegible] and obstetric bags are obviously born of the [illegible]

Sir Henry [illegible] half pages of foreword. In these days of over-specialization [illegible] the great majority of these now labelled consultant [illegible] bears particular [illegible] the stock from which specialist practice must [illegible] is being organized in many medical schools.

With the [illegible] Sir Henegage this book [illegible] will become a standard textbook in this subject.

[illegible] have the Service [illegible] these places amongst the ranks of the G.P. [illegible] does not deal with the daily round of clinical problems [illegible] necessary into which [illegible] the common tasks of farm filling and all the [illegible] adjuncts of doctor-hip.

SURGERY. HISTORY OF THE SECOND WORLD WAR. Edited by Sir Zachary Cope, B.A., M.D., M.S., F.R.C.S. United Kingdom Medical Series, compiled under the direction of an Inter-Services Editorial Board. Editor-in-Chief: Sir Arthur S. MacNalty, *K.C.B.*, M.D., F.R.C.P., F.R.C.S., who has written the foreword for this volume. Pp. 772, illustrated. London: Her Majesty's Stationery Office. 1953. Price 80s. 0d.

This volume is an abiding monument to British surgery. It is more than a surgical history of the Second World War—in fact its genesis is to be traced from the experience gained in the first and earlier of the Great World War. This experience, digested in the fateful years of the armed armistice of 1918 to 1939 (as this period will surely be known to future historians), provided a more solid foundation for the surgeons of 1939 than their fathers had had in 1914.

Moreover in 1939 Britain was fortunate in that the experience of these surgeons who had borne the heat and burden of 1914-18 was still available in 1939 to stimulate the brains and guide the hands of the new generation of surgeons. Who, for example, except Gordon Taylor could have compressed his wide experience of abdominal and thoracic abdominal surgery into the chapter devoted to this subject in this history? Those who were lucky enough to read his Abdominal Injuries of Warfare, in the early days of 1939 should now read it again in the light of the knowledge now available, and see how firmly the principles which he then enunciated now stand reinforced by the further experience gained in the Second World War.

The chapter on the general treatment of burns (by Sir Zachary Cope) is a masterly presentation of the problem which this subject presents for solution, even though it has not as yet been fully solved. Most of us remember the familiar story—how after a false start with the tannic acid coagulants more effective treatment was evolved mostly through methods of trial and error, till by the winter of 1940 and the spring of 1941 the saline bath and early grafting had come into their own, though there were exponents of the exposure technique for suitable cases.

This book helps us to recall the difficulties of those surgeons whose early experience of the tannic acid coagulants made them seek alternative methods, and gives a detailed account of the alternative treatments and in particular of the saline bath which was in use in the R.A.F. Burns Centres and particularly in Mediboes unit at East Grinstead in 1940.

Mention is made [illegible] the U.S. Naval burns [illegible] an elaboration of the [illegible] sulphanilamide. The [illegible] ment (which [illegible] thought should have very great ad[illegible] [illegible] naval warfare) is quoted [illegible]

[illegible] melted [illegible] the contents were liquid [illegible] When the [illegible] applied [illegible]

The [illegible] applied [illegible] The equipment [illegible]

The [illegible] as follows:

Paraffin wax	6[illegible]
Petroleum	[illegible]
Petrolatum	1[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
Menthol	1
Camphor	1
Oil Eucalyptus	1

[illegible] the [illegible] replaced [illegible]

[illegible]

In [illegible] but Sir [illegible] built up [illegible] has [illegible] the [illegible] Surgeon [illegible] all surgeons [illegible] Second World War

Here too is much food for thought by the orthopaedic surgeons in the General Review of Orthopaedic Surgery by Osmond-Clarke and Crawford Adams.

Naval surgeons may read with some surprise that the (so-called) Tobruk splint was devised by the Australians in the Western Desert. Those who served in the R.N. Hospital at Chatham in 1940 will remember receiving many scores of patients from Dunkirk via the R.M. Infirmary Deal clad in a Jones Splint with fixed skin traction. This was the splint which two years later was to become known as the Tobruk splint.

As no review is complete without a reference to a minor error it must be pointed out that in the description of the Tobruk splint given on page 241 the basic splint is described as a Thomas. In fact of course it is based on Sir Robert Jones very considerable modification of the Thomas splint. It is in the interests of historical accuracy (apart from the fact that a *Thomas* splint would be quite useless for the purpose described) that this note is made.

Sir Heneage Ogilvie remarks in the General Introduction "To claim however that the surgeons at the surgery of the recent war were better than those of the previous one would be foolish. They were not because they could not be. The Casualty Clearing stations in Flanders and France in 1917 and 1918 where men like William Anderson Richard Charles Claude Frankau John Fraser and Gordon Taylor worked and laid down the principles of post Listerian surgery set an example which could hardly be surpassed. That their successors in the field surgical units Casualty clearing Stations Specialist Units and Base Hospitals in this war worked with the same selfless devotion and attained a standard which can be compared with theirs is the highest praise that can be offered them.

Si monumentum requiris, circumspice

MEDICAL HISTORY OF THE SECOND WORLD WAR. ROYAL NAVAL MEDICAL SERVICES. VOL. I. ADMINISTRATION. Edited by Surgeon Commander J. L. S. Coulter A.S.C., R.N. Barrister-at-Law. 1954. Pp. 512. Plates xiii. London: H.M. Stationery Office. Price 50s. 0d.

In spite of many delays Vol. I of The History has at last seen the light of day eight years after the war ended and in emphasize the difficulties its succession of Editors must have had 2½ years after the fareword was written by the then M.D.G. It should be emphasized that Medical Services includes the work of the Dental Branch Q.A.R.N.N.S. V.A.D.s and S.B. Staff.

Let it be said at once that it was well worth waiting for and should be read with the greatest interest by all the members of these various branches. The style is absolutely first-class and is well up to the standard one would expect from the final editor.

The increase in the numbers of the Medical Services was beyond anything foreseen by the planners. At the outbreak of the war there were 370 medical officers serving in May 1945 the figure was 2,535 the vast majority being of course R.N.V.R. Here one might mention the sense of injustice which the pre war R.N.V.R. felt when the National Service and other temporary medical officers were commissioned in the Volunteers a grievance which has not been righted in the post war era. For the first time women doctors 25 in all were also commissioned in the R.N.V.R. Other figures are equally revealing. The Dental Branch stood at 123 in 1939 and at 686 when the war ended and 7 women dental officers were commissioned during the war years. The Q.A.R.N.N.S. rose from 85 to 1,341 and the S.B. staff from 1,162 to 7,628. Some 5,281 V.A.D.s served with the Navy. (In passing it is interesting to note that the W.R.N.S. reached a total of 100,000.) These men and women saw service ashore in many lands and climates and afloat in the seven seas. At one period there was a R.N. Hospital at Vuengo in N. Russia, while medical cover was also being afforded at a naval base in the Antarctic.

The story of our Hospital Ships is one to stimulate admiration and pride for the work done often under the most adverse conditions. The old H.S. *Maine* was already a hoary veteran in 1939 and she must have been the accepted model taken by the Ministry of

Shipping [illegible] hospital ships [illegible] Medical Department [illegible] only one such ship the Dutch [illegible] *Tjipalengkas*

Pr[illegible] of the longest chap[illegible] and rightly [illegible] It is not realized [illegible] Medical Service is to prevent [illegible] This is often [illegible] selected like the [illegible] the surgical or medical wards. Here [illegible] formed between the Medical Research Council [illegible] partnership which fortunately was not [illegible] the war ended

There [illegible] the work of the Naval Medical Service. [illegible] a time that the Naval doctor and hut [illegible] public there are just a few hospitals to deal with patients [illegible] book [illegible] seen tendency that in naval [illegible] actually affect [illegible] the [illegible] under in barracks training establishments dwel[illegible] The growth of the Naval Air Arm was quite remarkable [illegible] necessary to train doctor pilots to live ashore and [illegible] during the war years for there was a small but [illegible] Air Direction Unit based on the R.N. Hospital Stone[illegible] S.B. staff and playing to and from the forward [illegible] expressive word transmitting to [illegible] Medical Stores

The story of the [illegible] the most naval campaigns is promised in Vol. II [illegible] details of the work in our hospitals and sick [illegible] nursing and at the time not always [illegible] All the [illegible] in these establishments will read with [illegible] the last minutes of work which was achieved

Some may not be able [illegible] the speed [illegible] admiration for the foresight wisdom men and [illegible] to destinations from St James's Street but they had their own [illegible] Secretary regulations seem to delay information reaching [illegible] planning is usually well advanced if not completed before the Medical Service [illegible] It is hoped though without much confidence of [illegible] tradition may be broken and indeed that full use will be made in future of those Medical Officers who have passed the Naval Staff Course

This book is recommended as a must to be read by all who served or are serving in the Medical Dental or Nursing Branches. The machine may sometimes have creaked and the oil was not always available in the right sort but the Naval traditions of versatility and adaptability nearly always overcame all difficulties. It is with pride we can truthfully say that when trouble came the men and women who ministered to the sick and wounded were not found wanting

THE DENTIST'S HANDBOOK ON LAW AND ETHICS By W. R. Tattersall F.D.S. H.D.D.R.C.S.Edin., L.D.S.U.St.Andr. Lecturer and Examiner in Dental Jurisprudence U.St.Andr. Member of Council Medical and Dental Defence Union of Scotland and H. D. Burry of the Middle Temple Barrister at Law 1953. Pp. 328 + xiv. London: Eyre & Spottiswoode. Price 28s. 0d.

A gap in Dental Literature has been filled. This volume gives the dental surgeons for the first time a reference book of the Acts of Parliament concerning his profession, the organization of the National Health Service and the powers and procedures of the Dental Board.

The chapter on Courts of Law and Legal Procedure should be studied by all against the time when one may be called upon to give evidence in Court. Chapter XIII which

deals with identification by teeth and jaws is very [illegible] great value of well kept records and case histories of patients

The chapters on Income Tax and Superannuation [illegible] ful and enlightening to the dental surgeon and maybe also to the [illegible]

The authors are to be congratulated on the production [illegible] should be considered an essential on every dentist's bookshelf

CLINICAL MEDICINE Some Principles of Thinking Learning and Teaching By R D Lawrence M A M D Aberdeen F R C P Physician-in-Charge Diabetic Department King's College Hospital 1954 Pp viii + 64 London H K Lewis & Co Ltd Price 7s 6d

The writer of this book whom the reviewer has never had the pleasure of meeting but whose humane outlook on life in general and medicine in particular stands out in every page brings forward besides advice to medical students on their clinical studies many suggestions to the reform authorities for improving the medical curriculum As regards the latter for example he considers that early specialization of the education into scientific subjects as occurs when the 1st M B is taken at school is to be deprecated he demands a wider general education first On the other hand he would reduce the amount of anatomy learnt and would like to see it integrated better with physiology He would also like to see reduced the subjects dealt with in lectures that can be just as easily learnt from books so as to save the torture of note taking

With many of these ideas it is easy to agree with Doctor Lawrence—for example the absurdity of the ordinary doctor being taught so much anatomy and the even greater absurdity of labouring to take down in notes that which can easily be read in a book But with some of them it is harder to agree For example the ordinary doctor does not qualify nowadays much below 25 At that time his knowledge is merely rudimentary knowledge of such important side subjects as for example skin diseases He has a great deal to learn—and is already 25 What would the position be if he spent another year or two learning up a foreign language before starting the canalization of his education as Dr Lawrence suggests It is true that knowledge of the English language is often very shocking in young doctors who often do not even know how to construct a paragraph but such that is a fault of how English is taught—with the emphasis on analysis (parsing) rather than on construction Dr Lawrence himself points out the enormous increase in the medical knowledge to be mastered nowadays As the duration of human life is a constant something may go Latin and Greek have already almost gone perhaps more must follow And if a man is of any intellectual stature at all he will acquire general subjects such as history and literature for himself as a pleasure and an interest

This is a very stimulating little book and deserves careful perusal

THE ANATOMY AND SURGERY OF HERNIA By Leo M Zimmerman M D Professor of Surgery and Co Chairman of the Department of Surgery Chicago Medical School Attending Surgeon Michael Reese Cook County and Chicago Memorial Hospitals and Barry J Ansell Ph D Professor of Anatomy Northwestern University Medical School Member of Attending Staff, Passavant Memorial Hospital First Edition 1953 Pp x + 374 with 204 figures London Baillière Tindall and Cox Price 76s 6d

In the Preface to this book the authors state that an accurate knowledge of the anatomy involved in hernia has been of measurable value to the surgeon in his choice of operative methods and again The anatomical studies go beyond the usual morphological descriptions They represent an painstaking and thorough investigation based entirely upon actual dissection

In view of these preliminary remarks it is disappointing to find that minor anatomical errors are numerous and betray a lack of attention to detail. For example page 74 column 2 line 36 presumably should read At the Anterior Superior Spine the artery pierces the Transversalis Fascia and pierces the Transversus muscle midway along the Iliac Crest

Page 89 In the description of figure 49a column 1 line 4-8 beginning "from the muscular aponeurotic portion the meaning appears to be that the posterior wall is fascial only although this is not at all clear

Page 106 column 1 line 4 should read *Medial Inguinal fovea*

Page 106 column 1 line 16 should read Lateral boundary of the *medial* Inguinal Fovea

Page 116 column 2 line 18 should read *Obliterated Umbilical artery* not epigastric

Page 126 figure 69 subscript should read *Ureteral* and not urethral

Page 262 column 1 line 4 should read *External Iliac* not Subclavian.

Page 331 column 1 line 34 should read *Left* to *Right* and not right to left

Page 341 column 2 line 5 should read *into the front of the medial surface of the Great Trochanter*

In the section on Internal Hernia the description of the formation of the left paraduodenal hernia, taken in conjunction with figure 195 is incomprehensible. On page 333 in the description of the formation of a left paraduodenal hernia beginning on line 11 column 2 it is stated that the small gut becomes incarcerated behind the mesentery of the descending colon Figure 195 to illustrate this shows clearly in the fourth diagram that the mesentery of the descending colon is lying behind the hernia

Figure 195 No 3 shows the small gut passing to the left in front of the superior mesenteric artery and thus the left paraduodenal hernia cannot be a further degree of the same malformation which produces the right paraduodenal hernia (Fig 194).

The nylon darn repair of direct inguinal and incisional hernia, which has gained favour recently in England is not mentioned

McIndoe's high extraperitoneal approach which overcomes the disadvantages of both the low and the high operation should have been mentioned

Despite the repetitive tendencies especially marked in the anatomical section and the errors mentioned above this is an excellent book on Hernia It is well produced, liberally illustrated, and there is a wide bibliography

We acknowledge with thanks receipt of the following publications

Anales de la Facultad de Medicina Montevideo Annales Medicinae Internae Fennae, Annals of Tropical Medicine & Parasitology, Australian Journal of Experimental Biology & Medical Science Broadway *British Journal of Surgery British Medical Journal, Bulletin International des Services de Santé Bulletin of the World Health Organization Chronicle of the World Health Organization Guy's Hospital Gazette Journal of the Bowman Gray School of Medicine Journal of the Irish Medical Association, Journal of the Royal Army Medical Corps Journal of the Royal Naval Scientific Service, Medical Journal of Australia Medical Journal of Osaka University, Medical Press Medical Technicians Bulletin Middlesex Hospital Journal* Military Surgeon's *Proceedings of the Staff Meetings of the Mayo Clinic St Mary's Hospital Gazette, St Thomas's Hospital Gazette Sydney University Medical Society Bulletin Tohoku Journal of Experimental Medicine Tropical Diseases Bulletin, United States Armed Forces Medical Journal, United States Medical Technicians Bulletin University of Birmingham Medical Journal Yokohama Medical Bulletin*

Contributed by Dr Barando

A *specialist* is a man who concentrates more and more on less and less

News of the Service

OBITUARY

Surgeon Commander [illegible] B. KELLEY, R.N. (Ret.), died on [illegible] 1936. Born on the 19th [illegible] 1889, he qualified in 1916 and entered the R.N. Medical [illegible] as a Surgeon Lieutenant [illegible] 16th April 1916. He became Surgeon Lieutenant Commander in 1924, Surgeon Commander in 1928, and [illegible] the R.N. [illegible] on the 5th July 1936.

During World War I he served in Gunboats in Kellet [illegible] R.N. H[illegible] and in H.M.S. *Orvieto*.

Fleet Surgeon P. H. A. CLAYTON, R.N. (Ret.), died [illegible] 9th June 1944. Born on the 9th June 1861, he qualified in 1889 and entered the R.N. Medical Service as Surgeon on the 15th September 1892. He served in Sentinel, Sutlej, [illegible] Surgeon in 1907, and was placed on the Retired List (on his request) [illegible] April [illegible].

As Surgeon of H.M.S. *Thetis* [illegible] under Rear Admiral Sir Frederick Bedford, *K.C.B.*, against Kwale Kwale, Nyali, [illegible] the chief town of Brava in the River Nogal, [illegible] he was awarded the Gilbert Blane Medal for the year 1894-95. In the [illegible] he served in H.M.S. *St. George*, he was present at the [illegible] capture of the Sultan of Zanzibar's Palace on the 27th August 1896. In [illegible] Rear Admiral H. H. Rawson, *C.B.*, [illegible] commanded by Rear Admiral Rawson, *C.B.*, [illegible] the Klog of Beolo for the massacre of the pilots Lyell and [illegible] the capture of Beolo City on the 18th February 1897. He was [illegible] in the Beolo Expedition.

Surgeon Lieutenant Commander B. CEOGHEGAN, R.N. [illegible] 15th January 1954. Born on the 15th September 1919, he qualified in 1947 and entered the R.N. Medical Service as a Temporary Surgeon Lieutenant, R.N.V.R., on 16th April 1946. He transferred to the Permanent List, R.N., as a Surgeon Lieutenant [illegible] 1946, and was promoted to Surgeon Lieutenant Commander [illegible] May 1953.

We are indebted to Dr. H. M. Stocks, Fellow and Medical [illegible] College, Oxford, and Director of Laboratory [illegible] Hospital, Nairobi, for the [illegible]

The death of Surgeon [illegible] Commander B. [illegible] in the early age of 34 is a very serious loss to his many friends and [illegible] which he was engaged.

He was born in Belfast where his father was [illegible] World War I, his father being Dr. Joseph Geoghegan, who practised [illegible] Wapole Street and was consultant at the Royal and Hospital, [illegible] known as a pioneer under the name of Marcel Kerr Brown. At the end of World War I the family moved to Kingston, Jamaica, and at the age of 8 Bob [illegible] of old to England and then to Epsom College before going to the Middlesex Hospital medical training, qualifying in 1945. He started his London career as a [illegible] swimming, being a diver of international class, until an accident with the [illegible] contest caused him to abandon these activities.

After completing house appointments he joined the R.N.V.R. and was transferred to the permanent list of the R.N. in November 1946. [illegible] in H.M.S. *Swift* and here he was described as an officer of [illegible] and ability and capable and zealous in all his duties. In December 1948 [illegible] was seconded for duty to

the Medical Research Council Unit for Climate and Working Efficiency in the University Department of Human Anatomy in Oxford under Professor le Gros Clark F R S Here he quickly showed very marked ability for research and accurate research which he combined with proficiency in statistical methods

He accompanied two Arctic cruises to study the effect of cold environment on nutrition Many valuable observations were made which have been incorporated into reports in collaboration with the staff of the University Laboratory of Human Nutrition and into two papers communicated to the IIe Congrès International de Biochimie in Paris in 1952 Later he made a special study of the determination of body measurements body volume and surface area by photographic technique (*Amer J phys Anthrop* 11 97–128 1953) This method which is easily applied has considerable advantages over the usual somatometric methods

His liveliness and good humour made him a delightful companion and his wide interests and prodigious reading made him a well informed conversationalist It was typical of his tenacity and loyalty that after his first severe illness in 1951 he returned to work until in September last year a recurrence of his illness finally forced him to abandon the work he so much enjoyed

In January last he married Kathleen Sargisson Fellow of Somerville College Oxford

Surgeon Captain W T HAYDON R N (Rtd) died on the 2nd February 1954 Born on the 27th May 1876 he qualified in 1902 and entered the R N Medical Service as a Surgeon on the 23rd May 1904 He was promoted to Surgeon Lieutenant Commander in 1912 Surgeon Commander in 1917 and was placed on the Retired List (age) in 1926 with the rank of Surgeon Captain

During World War I Surgeon Captain Haydon served in H M Ships *King George V Conquest* and *Minerva* and was awarded the Croix de Guerre by the President of France for war services

Surgeon Captain H H PEARSE R N (Rtd) died on the 20th February 1954 Born on the 7th February 1868 he qualified in 1891 and entered the R N Medical Service as a Surgeon in May 1899 He was promoted to Staff Surgeon in 1903 Surgeon Commander in 1909 and was placed on the Retired List (own request) in 1910 with the rank of Surgeon Captain

During World War I Surgeon Captain Pearse served in H M Ships *Talbot Blenheim* and *Caesar*

Surgeon Lieutenant Commander G A JACKSON R N (Rtd.) died on the 28th February 1954 Born on the 3rd December 1881 he qualified in 1908 and entered the R N Medical Service as a Surgeon Lieutenant on the 14th May 1909 He was placed on the Retired List (Medically Unfit) in 1911 and was promoted to Surgeon Lieutenant Commander on the Retired List in 1921

HONOURS AND AWARDS

Queen's Honorary Physician

Surgeon Rear Admiral R C Mac *OBE MC* M R C S L R C P

Polar Medal

Surgeon Lieutenant D G Dalgliesh M R C S L R C P

HIGHER DEGREES

M R C P	Surgeon Lieutenant Commander J MacF Cliff M B B Ch
M R C P	Surgeon Lieutenant Commander J D Stride M R C S L R C P
F R C S (Ed)	Surgeon Commander F O Brien M B B Ch
F F A R C S	Surgeon Commander A O Connor M B B S D A
F F A R C S	Surgeon Commander T F Miles M R C S L R C P D A
F D S	Surgeon Lieutenant Commander (D) E B C Cliff L D S
D T H	Surgeon Commander A W W Robinson M D L R C P L R C S, D P H

PROMOTIONS

To [illegible] Commander—N S Marsden G C [illegible]
To Surgeon [illegible] Commander—H A Wainwright [illegible] S Law M B E
To Surgeon [illegible] Commander (D) R S Haigh

TRANSFERS TO PERMANENT LIST

Surgeon Lieutenant—G A R Gill K P O Bryne

RE-ENTRIES TO PERMANENT LIST

As Surgeon Lieutenant Commander G Hiers B A Jones
As Surgeon Lieutenant-Commander (D) B T Rogers
As Surgeon Lieutenant—R S Forrester P R Morgan

TRANSFERS TO SHORT SERVICE (From R N V R.)

J M London M B Ch B M R C S L R C P (seniority 10 12 53)
N H Brodie M B Ch B (seniority 10 12 53)
R W F Paul M B Ch B (seniority 12 11 53)
L M Davis M B B S M R C S L R C P (seniority 14 1 54)

ENTRIES FOR SHORT SERVICE COMMISSION

C Ward L R C P & S H S Hipp M R C S L R C P A G Chisholm M B Ch B
A F Davidson M B Ch B J G Bradford M B B S C I Stacey L D S

WARDMASTER OFFICERS

PROMOTIONS

To Wardmaster Lieutenant—W M Montemeni
To Acting Commissioned Wardmaster—W H D Higgs W O A Austin

RETIREMENTS

Wardmaster Lieutenant W B Saunders

QUEEN ALEXANDRA'S ROYAL NAVAL NURSING SERVICE

PROMOTIONS

To Superintending Sister—Miss M E Lewis Miss A E L Burman Miss A M Gadd

ADMIRALTY FLEET ORDERS

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33—Ratings—Sick Berth Branch—Radiographers—Training for M.S.R.

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108—Surgeons and Agents.

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629—Medical Stores—X-ray Films for Medical Purposes—Transfer to Vote 3

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667—Radiation Hazards—Precautions for Protection of Personnel Concerned with use of X-ray Apparatus or Radio-active Materials

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830.—Medical—Forces Medical and Dental Services Committee—Evidence

Notice

The Editor invites medical officers to send in original papers on professional subjects travel, personal experiences &c. Items of news and matters of interest to the naval medical service will be welcomed from ships and establishments at home and foreign stations. Notices of births, marriages and deaths are inserted free of charge to subscribers.

All articles or communications published in the JOURNAL OF THE ROYAL NAVAL MEDICAL SERVICE will become the property of the Journal with full copyright powers unless the author declares when sending the article that he desires to reserve the copyright to himself. All articles should be sent in duplicate.

The Harvard system should be employed for bibliographical references: these references being arranged in alphabetical order of the authors' names at the end of the contribution thus: Smith F. G. (1935) *J. roy. nav. med. Serv.* **22**: 53. In the text a reference to a publication should be cited by giving the author and in brackets the date thus: Smith (1935) believed this to be due, &c.

All communications should reach the Editor on or before the first of the month preceding the date of issue. Unless clearly written they should be typed in order to avoid misreadings and they should be addressed to the Editor, JOURNAL OF THE ROYAL NAVAL MEDICAL SERVICE, Monckton House, Alverstoke, Gosport, Hants.

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The subscription is 20s. per annum (postage included) payable on 1st January of each year, but should a subscriber wish to commence at another quarter he may do so by payment at the rate of 5s. per copy. All subscriptions are payable in advance. Single copies can be obtained at 6s. per copy. Cheques or postal orders for subscriptions should be crossed "Lloyds Bank Ltd." and be made payable to the Manager, JOURNAL OF THE ROYAL NAVAL MEDICAL SERVICE, Monckton House, Alverstoke, Gosport, Hants, to whom all communications relating to subscriptions, &c., should be addressed.

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Royal Naval Medical School, Alverstoke, Hants.

VOLUME XL SUMMER 1954 No. 3

Journal
of the
Royal Naval Medical Service

Articles

THE BASIC PRINCIPLES OF THE TREATMENT OF MAXILLO-FACIAL INJURIES[1]

BY

N. L. ROWE

Consultant in Dental Surgery to the Royal Navy

WE ARE TOLD BY EMERSON that the most complicated sort of Wounds that [illegible] are those in which Fracture, Contusion, Attrition and Laceration [illegible] in a high degree in [illegible].

HAVING THIS [illegible] the Treatment of Wounds I consulted with [illegible] Surgeons [illegible] to help the Surgeons [illegible].

S. Ward Chirurgical Institutes
JOHN EVELYN WISEMAN [illegible] 1686.

DEFINITION

A MAXILLO-FACIAL injury *primarily* involves the bones constituting the middle third of the facial skeleton and the mandible together with the overlying soft tissues. Any injury within this area may *secondarily* involve such adjacent structures as the scalp, cranial meninges and brain tissues, the frontal paranasal and mastoid air sinuses and in certain instances the sphenoidal sinus together with the organs of special sense such as sight, vision and hearing. Interference with the normal function of the motor and sensory fibres of the cranial nerves will also be encountered from time to time principally as a feature of associated nerve and injury.

The wound may also involve the tongue and extend into the tissues of the pharynx and larynx and exceptionally the trachea and oesophagus.

THE FATE OF INJURY

Since the introduction of gunpowder into warfare it has been widely recognized that wounds of this nature differ vastly from those sustained

[1] A lecture delivered at the Royal Naval Medical School on the 10th March 1954.

from other causes. It has therefore become customary to refer to civilian and gunshot wounds in order to indicate the essential characteristics in a simple manner.

Civilian Injuries

The soft tissues are not lacerated to any extent unless an instrument or a knuckle duster has been employed, but moderate œdema and ecchymosis are to be anticipated when an underlying fracture is present.

The bones usually exhibit only linear fractures and comminution is uncommon.

Gunshot Wounds

The bullet, fragment of shell or mortar, etc., creates a wound at the point of entry which may vary from a punched out hole in the case of a bullet travelling at high velocity, to a ragged contused gash when an irregular fragment of metal which is spinning comparatively slowly strikes the face. As the missile travels through the tissues it fragments the bones and teeth and the velocity imparted to these particles converts them into *secondary missiles* so that a large explosive exit is created at the point of emergence (fig. 1).

The soft tissues therefore present a severely contused and lacerated appearance with little ecchymosis, into which particles of clothing, dirt, debris, etc., may be driven.

The bones manifest a comminuted type of fracture at the point of entry with gross comminution and bone loss at the point of exit of the missile.

It is proposed to discuss the problem of maxillo-facial injuries primarily in relation to the gunshot type of wound.

TREATMENT

The fundamental basis upon which treatment of any maxillo-facial injury is formulated may be divided into three major phases:

(1) The Primary Treatment.
(2) The Intermediate Treatment.
(3) The Secondary or Late Reconstructive Treatment.

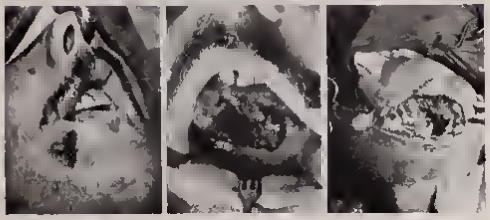
The nature and scope of the early treatment afforded to a case of maxillo-facial injury will necessarily be dependent upon the extent of the damage sustained, in relation to the facilities available at the time and thereafter, and the critical evaluation of the injury in relation to any associated lesions elsewhere in the body which may require prior consideration.

In time of war the surgeon will have to consider, in addition, such factors as the tactical situation which prevails locally, the chain of medical communication, and the facilities for evacuation of casualties. A judicious assessment of these factors will enable the best type of treatment to be determined for any individual case, and in general it will be found that the further forward in relation to the battle zone that the injury is sustained, the simpler should be the nature of the treatment carried out as an initial measure, but in every case there are certain essential criteria which must be observed.

The Primary Treatment

The objects to be attained at this phase of the injury are

(A) The Preservation of Life
(B) The Prevention of Infection
(C) The Elimination of Pain and Discomfort and Alleviation of [illegible]



[illegible]

(D) Observation with regard to the Development of Meningitis Intracranial Compression or Intrathoracic and Abdominal Complications
(E) The Treatment of Dental Injuries and the Fixation of Fractures of the Facial Skeleton
(F) The Treatment of the Soft Tissue Injury

(A) The Preservation of Life

1 *Maintenance of the Airway*

Apart from an initial major injury to the great vessels of the head and neck or gross damage to the brain or spinal cord death occurring in the early stages following a maxillo facial injury is usually due to *suffocation from obstruction of the airway*

Whilst the patient is conscious able to move and invoke the aid of the accessory muscles of respiration a considerable degree of respiratory obstruction can be actively overcome by the efforts of the patient himself If the respiratory centre is depressed by drugs anoxia or shock such efforts become futile and may *entirely cease with the onset of unconsciousness* (e g coma or anæsthesia)

There is a special danger in the administration of repeated doses of morphia which become pooled in the stagnant peripheral capillary circulation concentrated in shock only to enter the circulation simultaneously when the patient has been resuscitated In the presence of an associated maxillo facial injury the administration of a further respiratory depressant such as intravenous Pentothal for the induction of anæsthesia under such circumstances will most probably prove to be fatal

The direct causes of respiratory obstruction are

(a) *Blood clot* obstructing the airway at any point from the nares or oral commissure to the bifurcation of the trachea Immobilization of the jaws in the presence of edematous lips and blockage of the nares by clot provides an example of this nature as does inhalation of a moderately large blood clot on to the vocal cords when the cough reflex is depressed or enfeebled

(b) *Foreign bodies* such as fragments of tooth denture crowns bridgework bone or soft tissue being inhaled

(c) *The tongue* deprived of a stable anterior support as in the case of a comminuted fracture of the symphysis falls back against the posterior pharyngeal wall

(d) *The soft palate* in the case of a severely retroposed maxillary injury may rest upon the dorsum of the tongue and the posterior pharyngeal wall

(e) *Laryngeal œdema* may occur in conjunction with associated wounds of the pharynx and neck

(f) *The floor of the mouth* and tongue may swell up from infection introduced by fragments of metal or clothing and bring about a condition similar to Ludwig's angina

The Prevention of Respiratory Obstruction

(1) *Posture* If walking the patient should incline the head well forward

and place the [illegible] on the shoulders of a [illegible] who will both assist in support and lead the way.

If a stretcher case. The patient should be *prone* to face downwards with the forehead resting on a broad bandage tied across the handles of the stretcher. Alternatively the usual position lying on the side may be adopted in less severe cases.

(2) *Oro naso pharyngeal toilet.* With the aid of a sucker swabs forceps and a good light the mouth and nasal passages should be cleared of foreign bodies débris and blood clot.

(3) *Anterior traction of tongue.* A suture through the tongue should *not* be passed through the tip which is the most sensitive area and which exerts the least effect upon the posterior third which is the region in contact with the pharyngeal wall when obstruction from this cause occurs. A heavy suture should be passed through the *dorsum* of the tongue *as far back* as possible. The suture is then tied around the upper incisor teeth if present and secured or a button or hixed point on the clothing after anterior traction has been exerted. In the absence of a needle and suture a safety pin and piece of string or tape is a good substitute.

(4) *Naso pharyngeal tube.* A tube of suitable diameter is lubricated with a topical analgesic such as Decicain and passed back through the least obstructed nasal passage after removal of clot by suction if possible. This will prevent any obstruction from contact between the soft palate and posterior pharyngeal wall and will relieve blockage due to clot in the nares.

Great care must be taken to ensure that the tube remains patent and does not become plugged subsequently by mucus or further clot. The mere presence of a naso pharyngeal tube does not mean that respiratory interchange of gases is necessarily occurring.

(5) *Avoidance of drugs* which depress the respiration. Morphia and its derivatives are best avoided not only from this point of view but also since they may mask the pupillary changes which herald the onset of intracranial compression.

The Relief of Established Respiratory Obstruction

If the measures enumerated above fail to prevent respiratory obstruction in an emergency forcible manual traction on the central symphysial block may be indicated in a bilateral fracture of the mandible or in the case of a telescoped middle third injury the insertion of the crossed index and middle fingers behind the posterior edge of the soft palate will enable strong anterior traction to be rapidly effected thereby alleviating the obstruction.

When maxillary/mandibular fixation has been previously carried out in the presence of a nasal injury immediate release of fixation may be indicated in order to allow mouth breathing to occur.

Failing this and in the presence of oedema of the larynx and/or floor of the mouth and pharynx tracheotomy will be indicated particularly if the post operative supervision will unavoidably be inadequate (fig. 2).

II *Arrest of Hæmorrhage*

Severe primary hæmorrhage is likely to be fatal before skilled [illegible] can be obtained. Lesser degrees can usually be controlled by the insertion of a shell or wound dressing, pressure being effectively maintained by firm bandaging. Gravitational effects are lessened by sitting the patient up unless severe shock is present or the patient is unconscious.

[illegible] from [illegible] the [illegible] the presence of [illegible]

[illegible] spitting and swallowing of blood [illegible] the [illegible] arrangements [illegible] and [illegible] helpful to place a prop in the mouth [illegible] the head towards the injured side so that blood runs out of the mouth and movement of the jaws is prevented.

Obvious arterial bleeding points must be [illegible] and immediate suture is impracticable these should be left in situ for the time being.

Unless a good light and the eye fatigue [illegible] should be attempted but when such conditions exist [illegible] examination of the wound can be carried out and a more thorough attempt at hæmostasis effected. Topical application of Oxycel [illegible] or Gelfoam or a suitable may be of value in deep pockets.

It is very rarely that planned ligation of the external carotid artery will be found necessary.

Reactionary hæmorrhage may be encountered occasionally and secondary hæmorrhage several days later is a definite hazard particularly in the case of gunshot wounds.

III *The Prevention of Shock.*

Although a variable degree of primary shock may be present *severe* secondary shock is not a feature of maxillo facial injuries. This may be due to the relatively small aggregate mass of bone and soft tissues involved and simple resuscitative measures will usually suffice.

If a severe degree of shock exists it will be prudent to suspect the existence of some previously undetected associated lesion elsewhere possibly in the thorax or abdomen. Careful measures to combat this will be necessary and the intravenous administration of glucose saline or plasma substitutes such as Dextran or Plasmosan will be commenced after blood has been taken for grouping and cross matching pending the giving of whole blood.

(B) The Prevention of Infection.

The development of infection may be

(1) Local.
(2) Meningeal by extension from the nose.
(3) Pulmonary by aspiration of infected clot and debris particularly in the unconscious patient.

Prophylaxis consists in the immediate parenteral administration of 1,000 International Units of A.T.S. and one Mega (1,000,000) unit of Penicillin with 600,000 units bd. thereafter for five days. In the case of a middle third injury it must be remembered that Penicillin does not pass the blood meningeal barrier to appear in a therapeutic concentration in the C.S.F. Sulphadiazine or Sulphafurazol will, however be effectively concentrated when given orally and should be administered as a routine in such cases. If the patient is unconscious Sulphadiazine must be given by intramuscular injection. Only under exceptional circumstances should the intrathecal administration of Penicillin be considered. It must be given in the crystalline form diluted in the C.S.F. and never exceed a total of 20,000 units.

Other antibiotics such as Aureomycin, Chloromycetin, Terramycin and Erythromycin should be kept in reserve.

(C) The Elimination of Pain and Discomfort, Etc.

From the subjective point of view this factor is of great importance. The early fixation of fragments in support of the jaws will be of considerable assistance in minimizing pain. Pethidine 100 mg. by injection is valuable for the relief of pain and in extreme cases an anæsthetic should be given of a satisfactory outcome of treatment and that permanent disfigurement will be avoided. These factors are of the greatest value in maintaining the morale of a patient suffering from such an injury.

The lips should be liberally smeared with vaseline to prevent drying and cracking of the mucosa

(D) Observation with Regard to the Development of Complications

Neck retraction or rigidity flexion of the arms or legs on assumption with passive flexion of the neck or contraction of the hamstrings of the leg when the thigh is passively flexed are all suggestive of the development of meningitis

Dilatation of a pupil with a failure to respond to light on assumption with alteration in the spinal reflexes a slow full pulse increase in blood pressure and possibly elevation of temperature imply the development of an intracranial haemorrhage

Extreme pallor and thirst restlessness with air hunger and a rapid pulse and respiratory rate in association with tinnitus and dimness of vision and subnormal temperature are the signs and symptoms of a concealed or internal haemorrhage usually associated with haemothorax or haemoperitoneum

Splenectomy should be sought immediately if any of the above clinical findings become apparent

(E) The Treatment of Dental Injuries and Fractures of the Facial Skeleton

(1) *Dental Injuries*

Loose and severely displaced teeth should be pulled out otherwise they may be inhaled If they are not as loose as this they are better left alone unless some definitive treatment can be given to the fracture Exposed pulps may be cauterized with pure phenol

(2) *Fractures of the Facial Skeleton*

Treatment will be considered in relation to the following circumstances

(a) *In Forward Areas* or where facilities for treatment are limited, and early evacuation is contemplated

(b) *At Corps Medical Centre* level or when early evacuation to a specialist centre is impossible owing to the local situation e g jungle warfare without the assistance of helicopters isolation of the Unit by the tactical situation and on board ship at sea

(c) *Specialist Units at Base Hospitals or in more Forward Areas*

Treatment at all times must necessarily be related to the tactical situation in relation to the number of casualties anticipated and the transport available in conjunction with the length of the Line of Communication to the next level of surgical treatment

(a) *Forward Areas*

The guiding principle at this level is to perform the minimum amount of treatment compatible with the preservation of life and to effect stabilization of loose fragments whose movement would cause pain and haemorrhage The maximum benefit for the greatest number of patients will be required under battle conditions therefore simple treatment is opposite for safety of the individual in conjunction with efficient and rapid evacuation to a less congested level with better facilities should be the basis of the procedure employed at this stage

In every case a careful mouth and wound toilet should be rapidly and efficiently carried out. Only loose fragments of bone devoid of periosteal attachment should be discarded.

The Mandible.—If the treatment which it is proposed to carry out is not necessary for the preservation of life in the immediate aftermath of the patient during transportation to a base, it should be [illegible].

Simple direct intermaxillary wiring which may be needed should be dispensed with when definitive treatment is carried out, as usually sufficient where it is considered that some form of fixation is required. Otherwise, and in edentulous cases, a supporting bandage with a large absorbent dressing of gauze and cotton wool will suffice in most instances. Occasionally it may be considered necessary to provide some measure of support, but dentures employed as Gunning splints must always be lined with a layer of black gutta percha so that a fresh fitting surface may be adapted to the altered contour of the alveolar ridge caused by the displacement of the fragments. If this precaution is omitted severe pain will be caused by pressure, and ulceration and tissue necrosis may ensue.

Respiratory obstruction due to loss of control of the tongue may be countered by a suture through the dorsum of the tongue. In exceptional cases the use of an arch bar to hold forward a posteriorly displaced central section of the lower jaw may be considered.

Correct posture and attention to these details will usually obviate recourse to tracheotomy at this stage.

The Dento-alveolar Component of the Middle Third.—Maxillary mandibular fixation in any form is contra-indicated. The obstruction of the nasal passages by clot renders mouth breathing essential and this cannot be relieved if the jaws are fixed together and the lips swollen. Furthermore, without cranio-maxillary or cranio-mandibular fixation, wiring the maxillae to the mandible only serves to distract the dento-alveolar component from the cranial base when the mandible is moved.

Only under exceptional circumstances, in the presence of a grossly mobile upper jaw or jaw fragment whose instability and posterior displacement are liable to cause respiratory obstruction, should any form of *support* be provided. In this case, the use of a Kingsley type of splint in conjunction with a naso-pharyngeal airway is probably the best and most simple solution to the problem. The Kingsley splint should only have a minimal amount of compression inserted which is just sufficient to include the occlusal surfaces of the maxillary teeth.

Fractures of the Other Facial Bones.—These do not normally require treatment unless compound and severely displaced, when they may be repositioned gently by digital pressure and a dressing applied.

(*b*) *Corpus Medullare*

At this stage some system of triage should be employed to determine which cases can be treated locally and which require specialist attention in

Maxillofacial Units or Base Hospitals. In addition men cases selected for early onward transmission must have their general and maxillofacial fitness for further transportation determined.

The extent to which treatment should be carried out will be modified by the length of time which it is envisaged must elapse before the patient arrives at a base unit or specialized centre. Broadly speaking it will be wise to restrict treatment to that which may be performed with arch bars and interdental eyelet wiring, although the occasional use of peri-alveolar and circumferential wires will be necessary.

Such methods of fixation as cap splints, locking plates and connecting bars intraosseous wiring, and pin fixation should not normally be attempted without previous special experience and adequate facilities.

The Mandible

(a) *Where an adequate number of suitable teeth are present.* A carefully performed interdental eyelet wiring will give the best possible result provided that there are no unstable edentulous fragments present.

(b) *Where teeth which are inadequate in number and distribution exist.* Under these circumstances the use of arch bars secured to the teeth will be effective and may be employed in most instances where cast cap splints would otherwise be used. Reinforcement of fixation by circumferential wires may occasionally be considered.

(c) *Edentulous cases.* Simple fractures may be treated if the patient's own dentures are available.

These are modified by removal of the anterior teeth and the processing of Eggs to the buccal surface by means of quick setting cold cure acrylic. They are then lined with black gutta percha and fixed to the upper and lower jaws respectively by crib-cole and circumferential wires. Immobilization being obtained by elastic bands in loops between the hooks on the two splints.

Simple intraoral wounds may be sutured, but the following cases should be evacuated to specialist units if the tactical situation permits:

(i) Severe comminuted fractures.
(ii) Extensive essential facial lacerations.
(iii) Cases with unstable edentulous fragments.
(iv) Cases requiring intrapolating intraosseous wiring and pin fixation.

The Immediate Treatment of the Maxillofacial — Unless it is thought that as a result of this action will have to remain at this level of evacuation for more than a few days it will be in the first interests of the patient to arrange for transfer to a base hospital in spinal and after it has been ascertained that the fixation of present is effective and the patient fit for a further journey.

When a more effective means of support for the upper jaw is considered advisable, extra maxillofacial fixation can be carried out using nothing more elaborate than P.O.P. bandages, one eighth of an inch diameter stainless steel rod and 0.5 mm soft stainless steel wire. The technique is essentially

(c) A figure-of-eight wire [illegible] is [illegible] to the mandible [illegible] It thus is distributed [illegible] and fractures the upper arch may be employed in preference. This will make an efficient and strong arch bar.

(d) Ligate this bar to the mandibular teeth.

(e) Pass two or more heavy wires around the mandible one in each canine region and before tightening take a securing turn around the arch bar. A large curved dental needle may effectively be used to sew the wire around the bone.

(f) Lateral wires are placed in suitable positions between the upper teeth and these are low and far between the upper arch but is ligated to the teeth.

(e) Mandibular maxillary fixation is carried out with the wires. The dentoalveolar component of the mobile fragment is now an integral part of the mandibular component.

(f) Cheek wires are passed from above by means of a spinal needle and threaded underneath the zygomatic arch and the intermaxillary wires in the canine region of the *mandible*.

(g) The upper ends of the cheek wires are secured in the optimum position to projecting horns of the eighth inch diameter rod embedded in a previously applied P.O.P. headcap after bringing up the mandibular maxillary combined block against the cranial base by support below the mandible and traction on the cheek wires.

When applied efficiently this method of fixation may be all that is required as a definitive procedure.

Fractures of the other Facial Bones. As fractures of the nasal and zygomatic bones do not usually constitute a danger to life there is no indication for active treatment unless a considerable delay in evacuation to base is anticipated. Fractures of the nasal bones heal comparatively firm within seven days and fractures of the zygomatic bones are more difficult to reduce after ten to fourteen days and if transfer after that time must necessarily be contemplated early reduction should be carried out.

An exception must be made in the case of injuries of the naso-ethmoidal complex with associated cerebrospinal fluid discharge and lesions in this region or the frontonasal area involving the sinus which are compounded externally must receive treatment as soon as adequate facilities are available. Persistent epistaxis from this type of injury may be due to hemorrhage from the anterior ethmoidal artery which should be ligated.

(c) *Specialist Units at Base Hospitals*

It is in such centres that the definitive treatment will be carried out for casualties which have already had prior fixation carried out elsewhere or where the nature of the injury is such that specialised assistance is required in the first instance.

In the former case fixation will of course only be removed when it is considered that the methods employed will be adequate for the long term treatment of the injury. In many cases therefore reinforcement of existing fixation will be all that is required. On the other hand impressions for the construction

of cap splints may be indicated and whenever possible these should be fitted without anaesthesia and some simple interim fixation applied during the period when the splints are being constructed

In the latter instance a major maxillo facial injury involving extensive bone and soft tissue injury will require immediate attention and it may not be possible to defer the surgery of the soft tissues until splints have been constructed and cemented into position It is a basic principle that

Skeletal fixation precedes soft tissue repair

It will therefore often be necessary to take impressions before or at the commencement of the operation so that splints may be constructed and fitted several days or even a week or so later confining the initial fixation even though somewhat inadequate to interdental eyelet wiring or arch wiring

The primary closure of wounds or the use of inter osseous wires may today be considered under circumstances which would never have been contemplated before the introduction of such an extensive range of antibiotics which exist at the present time The clinical appearance of the tissues and general condition of the patient is therefore a better guide than any arbitrarily imposed time limit in association with experience and sound clinical judgment Inter osseous wiring of the bone ends may be indicated when gross overlap of edentulous fragments exists or when severe posterior displacement of a central edentulous symphyseal block has taken place

Pin fixation should be reserved for cases which cannot be effectively treated by other methods These are principally uncontrolled edentulous posterior fragments and compound comminuted fractures of the edentulous mandible

Otherwise fractures of the mandible maxillæ and facial bones of the middle third of the facial skeleton follow accepted methods

Operative Sequence —The sequence of the operative techniques employed for a typical severe injury of the middle third of the facial skeleton with an associated mandibular fracture is as follows

(1) Elevate depressed zygomatic bones (Unless this is done the central maxillary section cannot be brought forward adequately)

(2) Reduction and fixation of the dento alveolar component of the maxillæ (Introduce cheek wires)

(3) Reduction and fixation of the mandibular fragments

(4) Check the occlusion of the mandible and maxilla and if necessary adjust the position of the maxilla to ensure that there is no gagging of the occlusion in the molar area which might lead to subsequent distraction of the mandibular condyles when maxillary/mandibular fixation is applied

(5) Reduction and fixation of the naso maxillary and naso ethmoidal components (At this stage a stable base has been provided)

(6) Suture of intra oral and extra oral lacerations and wounds

(7) Removal of the throat pack tracheo bronchial toilet with a bronchial catheter attached to the sucker and the application of maxillary/mandibular

[illegible] as to the [illegible] of the nasal cavity or the likelihood of [illegible] of the [illegible] pharyngeal tube. *[illegible] should be omitted [illegible] the patient is fully [illegible]*

Special Procedures

The Zygomatic Bones.—Gross separation of the zygomatico frontal suture will necessitate the insertion of [illegible] interosseous wire to prevent a drop in the level of the lateral attachment of Lockwood's suspensory ligament. A persistent tendency to rotational displacement will necessitate pin fixation to a POP headcap.

The Orbital Floor.—Comminution will require a Caldwell Luc type of approach to the antrum and the insertion of an antral pack. (*Ribbon gauze soaked in paraffin flavine emulsion or Whitehead's varnish left in for ten days.*)

The Inferior Orbital Margin.—Gross displacement of the malar or medial third particularly in association with the nasal bone, frontal process of the maxilla and lacrimal bone will require interosseous wiring from an incision below the lower lid.

Impacted Maxillary Fractures.—Occasionally direct exposure of the fracture lines and instrumental disimpaction will be required.

Nasal Bones.—Persistent depression of the naso ethmoidal complex after reduction will require anterior traction to a vertical rod by transfixion with a stainless steel suture covered by rubber tubing or secured over lead plates (fig. 3).

(F) Treatment of the Soft Tissue Injury

The circulation and oxygenation of the facial tissues is so excellent that the more severe degrees of infection do not readily develop and skin tags and flaps remain viable under circumstances which would lead to sloughing and necrosis elsewhere.

Any debridement should therefore be minimal and only one millimetre of the wound margin normally requires excision.

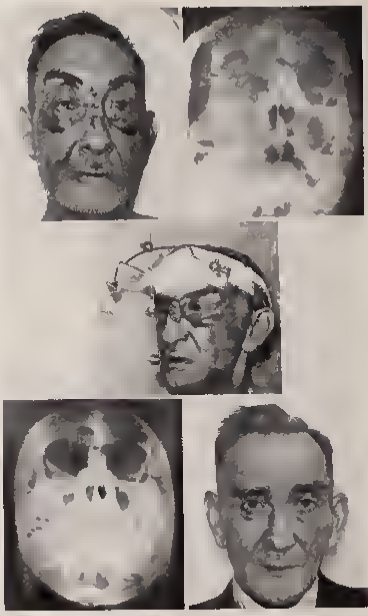
The treatment of the soft tissue injury in forward areas has already been described in connexion with the arrest of the primary haemorrhage and only the definitive treatment will therefore be considered.

(1) *Without Loss of Skin or Mucous Membrane.*—In every case a careful normal toilet must be carried out. This implies meticulous cleansing of the tissues by swabs soaked in saline detergent such as C.T.A.B., picking out of particles by fine dissecting forceps and if necessary scrubbing of the tissues to remove embedded grit and fragments. Failure to perform this part of the procedure will lead to infection, scarring and ugly tattooing from the retained material particularly carbon and silicon debris.

Excision of the skin edges as previously stated must be minimal and is best performed with a scalpel. The deep tissues can be excised again to a minimal extent by scissors.

Haemorrhage is usually slight and controlled by hot saline packs and

[illegible] of Maxillo Facial [illegible]



[illegible]

[illegible]

[illegible]

[illegible] fascia platysma skin. The skin edges are closed by fine non-traumatic silk sutures using a [illegible] eye needle inserting point (1016) sutures in the centre of the incision and then completing closure with further 1004 sutures at intervals of approximately 3 mm. Eversion of the margins is ensured by inserting the needle at right angles to the skin surface with the wrist in full pronation so that the needle takes a deeper bite of subcutaneous tissue than skin margin. A separate insertion of the needle about 3 mm from the edge is essential for each margin.

Intra-orally no raw bleeding areas must be left. These should be covered by suturing over mucous membrane. Trimming back the bone if necessary to ensure adequate cover.

A dry gauze pressure dressing is applied for forty-eight hours and thereafter the suture line is exposed to the air. Unless gross infection is present drainage is not usually required.

Sutures are removed no later than the fifth day to avoid scarring at their points of entry.

(2) *With Slight Tissue Loss.*—Wide undermining of the skin margins will allow approximation of the edges to be carried out owing to the elasticity of the tissues and the excellent vascular supply.

(3) *With Moderate Tissue Loss.*—Local or distant flaps may be rotated if special skill is available. Otherwise it will be advisable to obtain skin cover by means of a free split skin or Thiersch graft. No raw surface on the face should ever be left to granulate.

(4) *With Severe Tissue Loss.*—Raw surfaces should be closed by suturing skin to mucous membrane around the margins of the defect.

The Intermediate Phase of Treatment

In those cases other than severe loss of bone or soft tissue and extensive scarring this stage of the injury is the normal post-operative period of convalescence. It therefore includes routine care of the patient and the control of such complications as may occur.

(*a*) *Routine Care.*—*Diet* will initially be mainly fluid or semi-fluid in character. Frequent feeds will be necessary to maintain an intake of not

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(*Continued from opposite page*)

treated by open reduction and fixation by a figure of eight stainless steel wire. The nasal bones were held together by means of wires passed through from side to side and secured over lead plates which in turn were attached to the anterior vertical rod. An acrylic splint incorporating an anterior projecting bar was secured to the maxilla by periodontal wires in order to fix the fracture, the mandible by means of the anterior vertical rod and universal joints to the POP headcap. Further support was provided by the bilateral head straps.

The two lower illustrations depict the post-operative appearance.

less than 2 000 calories and 70 fluid ounces of liquid every twenty four hours Milk eggs glucose broths sieved foods etc will form the basis. Feeding with a special feeding cup to which is attached a length of rubber or plastic tubing is the best technique the tubing being placed along the buccal sulcus on to the dorsum of the tongue through gaps in the teeth The flow being controlled by pinching the tube between the finger and thumb

Oral Hygiene —Frequent irrigations are required daily using a 4 per cent solution of bicarbonate of soda with the addition of glycerine of thymol or sodium perborate Large quantities are employed with the aid of a Higginson's syringe and a special fine nozzle attachment

Infection —Local meningeal pulmonary renal or the development of thrombo phlebitis must be intelligently anticipated and prevented

Fixation must be carefully inspected and maintained As previously mentioned a change over to splints will be indicated in some instances This is best deferred until after the tenth day if possible to allow healing to progress

Sequestra and Retained Foreign Bodies —Infective episodes from this cause may occur and require surgical intervention although their occurrence is not so commonly encountered at the present time owing to better antibiotics and prophylaxis

Rehabilitation —Early ambulation is always desirable and every effort should be made to keep the patient's interest active by occupational therapy and rehabilitation

The Secondary or Late Reconstructive Treatment

This comprises four principal items of treatment

(*a*) Excision of excess scar tissue
(*b*) Restoration of deficient soft tissue
(*c*) Restoration of deficient bony tissue
(*d*) Restoration of dental appearance and masticatory efficiency

(*a*) *Excision of Excess Scar Tissue*

This is not normally performed before six months have elapsed to allow the fibrous tissue to mature and reach its maximum degree of natural suppleness In some instances the production of fibrous tissue is abnormally excessive leading to keloidal formation and in these cases pre operative and post operative radiotherapy will be of assistance in limiting fibroblastic activity

Elimination of restrictive scar bands can be achieved by the technique of Z plasty

(*b*) *Restoration of Deficient Soft Tissue*

Gross defects of the nasal and antral cavities and the oral cavity must be covered before any restoration of the bony defect can be attempted Tissue may be obtained locally by rotation flaps fan flaps visor flaps temporal pedicle flaps or brought from a distance by means of various tube pedicle flaps from the aeromio thoracic region abdomen scapula or cervical areas

In each case where a cavity is involved the flap must be lined to prevent contracture on the raw surface

Intra orally mucosal deficiency can be corrected by an epithelial inlay of split skin or a tube pedicle to the sulcus or palate

Deficiency of conjunctival tissue is better restored by means of a mucous membrane graft than a skin graft since the latter tends to continue to secrete sebum which encourages the development of offensive organisms

(c) *Restoration of Deficient Bony Tissue*

Firstly skin and mucosal cover must have been achieved before restoration of bone continuity is attempted

Secondly the remaining bone fragments must be placed into their correct anatomical position and maintained there by cap splints on the teeth pin fixation or the method appropriate to the situation The principle involved is therefore to place back into their normal position those structures which are normal and to bring in fresh tissue to reconstitute the defect thus created

Methods and materials employed are

(i) *Autografts* of cortico cancellous bone from the iliac crest or rib grafts Less commonly employed are osteo periosteal grafts from the fibula or olecranon process of the ulna

(ii) *Homografts* of cadaver bone preserved by deep freeze methods

(iii) *Heterografts* of preserved bovine cartilage

(iv) *Alloplasts* of vitallium lucite alumina acrylic or polythene and teroleine wool

Autografts are to be preferred whenever possible In most cases the iliac crest provides the best source of bone and the use of a space retaining strip of cortico cancellous bone and filling the remainder of the defect by cancellous chips is a standard procedure for mandibular defects Fixation of the main fragments must be maintained for from two to six weeks until the graft has consolidated

However a particularly good contour at the angle can be achieved by using a graft from the seventh or eighth rib whose shape is especially well adapted for this purpose

Bovine cartilage tends to become resorbed and replaced by fibrous tissue after a period of time and will be exfoliated if the slightest degree of infection supervenes

Depression of the nasal bridge or flattening of the zygomatic prominence can be corrected by reshaping in camouflaged by inlays of bone or polythene

Depression of the orbital floor and restoration of the orbital level can be achieved by the sub periosteal insertion of bone cartilage or teroleine wool

Occasionally persistent epiphora may follow damage to the naso lacrimal duct and the creation of a fresh passage into the nose by the operation of dacryocystorhinostomy will be indicated

(d) *Restoration of Dental Appearance and Masticatory Efficiency*

Gross defects in the alveolar bone deficient depth of the buccal sulcus

scar adhesions flabby ridges and altered relationship of the mandibular and maxillary arches give rise to exceptional prosthetic problems and call for the utmost ingenuity in the design and construction of dentures which is further complicated in many cases by the loss of elasticity of the commissures of the mouth

The use of sectional impressions may be called for in some cases and the construction of sectional appliances undertaken where access is limited Springs and suction discs are avoided where possible but may occasionally be the only means of support

Finally the prosthetist may be called upon to construct nerve eyes ears, and noses where further surgery is impossible or inadvisable

Malunion of the Facial Skeleton

(i) *The Mandible*

Provided that the callus is not more than one month old attempts may be made to restore the parts to their correct position by means of elastic traction applied to the splints Orthodontic methods of screw expansion etc will be found useful in addition under such circumstances

When firm union has occurred open operation and refracture will be required In certain cases without gross bone loss the *posterior* fragment may be approximated to the main segment in order to avoid the necessity of a bone graft

(ii) *The Middle Third*

(*a*) *The Dento-alveolar Component* —Elastic traction between a splint and a special vizor type of frame of three sixteenths of an inch Duralumin embedded in a P O P headcap may be made Alternatively 2 lb weight traction for 3 to 5 days over a pulley attached to a Bidlum bone frame may be employed up to four or six weeks following injury After this time osteotomy will probably be necessary

(*b*) *The Nasal Bones and Septum* —Lateral displacements or splaying require refracture with or without submucous resection of the septum Depressed nasal bridge lines require onlay grafting

(*c*) *The Zygomatic Bones* —Refracture at the zygomatico frontal suture inferior orbital margin and region of the zygomatico maxillary suture The bone is elevated via a temporal approach thus cracking through the arch and the bone stabilized to a P O P headcap for four weeks by pin fixation

ACKNOWLEDGMENTS

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The photographs were taken in the Department of Medical Photography Rookesdown House whose assistance is gratefully appreciated

ROYAL NAVAL AIRCRAFT YARD, FLEETLANDS

The Work Carried Out and the Medical Hazards Concerned

BY

Surgeon Lieutenant I. A. RUTHVEN-STUART, R.N.V.R.

The task of Fleetlands Royal Naval Aircraft Yard at Gosport is to repair and recondition aircraft and aero engines. In addition it houses an Air Stores Organization and assistance is given to special units such as the Mobile Aircraft Repair Unit, Naval Air Transport and Salvage Unit, Naval Air Radio Installation Unit and the Maintenance and Development Unit. The work is carried out by 1,400 men and 80 women who are civilians with a nucleus of Engineering and Electrical Naval Officers. The female employees are with one or two exceptions non-industrial.

An aircraft is sent to Fleetlands mainly for one of two reasons. Either it has been flying for two or three years and needs reconditioning or it has been damaged. A reconditioned aircraft may require as many as 100 modifications to bring it up to date at the time of despatch and this entails considerable stores organization to prevent any delay for lack of a small item.

The aircraft arrives by road, either towed in or in a 60 ft. trailer. It is then stripped of all its dope or paint and delivered in a clean condition to a shop which breaks it down into its main components. These components are further broken down in the various specialized sections and are either renewed or repaired. When all components have been individually repaired and tested they are then again united and the aircraft is reassembled, ground tested, butt tested, doped, compass adjusted and cleared ready for flight test.

Preventive medicine is the concern of every naval medical officer and when appointed as a factory doctor it is a *sine qua non*. He must direct special attention to the shop temperatures, the ventilation (including special ventilation required in certain processes) and the effectiveness of the illumination, particularly on individual machines. The latter requires an industrial photometer as mere impressions mislead where lighting is concerned.

The provision of washbasins with soap and hot water is essential where grease, oils and fat solvent chemicals are in use. The sanitary accommodation is equally important. The canteen must be clean and well run, if only to dissuade the workman from eating his sandwiches at his bench, which is a common habit. It is probably too little realized that a workman can do little to help himself in industry and has to accept conditions as he finds them. If a workman is to be protected from accidents and ill health it is not a question of how little we need do for him but how much it is possible to do. Much of the work carried out at Fleetlands carries potential risks to the employees and it is this aspect which is stressed here.

[illegible]

[illegible] a large part of the [illegible] solvents and [illegible] fumes.

[illegible] chemicals [illegible] sodium and so on [illegible] Generally speaking, [illegible] will cause dazzling [illegible] prevent inhaled [illegible]

The [illegible] in cleaning [illegible] gave rise to [illegible] and making [illegible] and [illegible] in small amounts [illegible] and protective clothing.

Digreasing [illegible] rather [illegible] has fallen to the use of cresol soap which [illegible] substitute [illegible] by cresol, soda by paraffin [illegible] a proprietary substance [illegible] other things, contains cresol [illegible] Skin [illegible] greatest risk with any of these [illegible] by the use of barrier creams and protective clothing. The [illegible] liquid [illegible] high concentration to be [illegible] Most of the [illegible] have suffered to the [illegible] though small ingestion. Of [illegible] prolonged contact of cresols with the skin causes [illegible] and [illegible] depending on the concentration and duration of [illegible] and ulceration.

Trichlorethylene as an anaesthetic [illegible] that the chief danger is that of an [illegible] narcosis following prolonged exposure to high concentrations. There is [illegible] margin between the narcotic and the lethal dose. The trichlorethylene is used in the form of a vapour bath and it is worth remembering that it [illegible] liquid [illegible] at room temperature. 2·7 ml. of vapour in the [illegible] concentration may readily develop. Thus residuals can [illegible] if the tank is being cleaned if proper precautions are not observed.

Eye irrigators should be easily available in the shop to minimize the effects of any burns of the eyes from chemical splashes. Buffered phosphate 2% per cent (pH 6·5–7·5) is most useful for all types of burns; acid or alkali but in solution a bucket of water into which [illegible] plunge his whole head should always be at hand.

Paint Removers

Organic solvents are in use as paint removers and their use involves a risk due to their toxicity. One of these removers consists largely of acetone benzene or toluene and ethylalcohol. An extra strong remover also contains methylene chloride which is a solvent for cellulose acetate fats and

and not [illegible] There is probably little danger under conditions of good ventilation and it is rare if other products such as [illegible] hydrocarbons but it quite definitely has a distinctly [illegible]

Salt Baths

Molten salts are used in heat treatment of [illegible] aluminium alloys and carry certain dangers which are apt to be [illegible] by familiarity. The contents of the salt bath include sodium nitrate and potassium nitrate. Since the working temperature is in the region of [illegible] C any quantity of water falling into the bath would cause a violent explosion. For this reason the area of the bath is raised off and [illegible] and no unauthorized person is allowed near the bath.

There are four other large tanks or baths which may carry a hazard and may be described conveniently at this point.

A hydrofluoric acid bath is used for stripping anodic film from aluminium and its alloys. This acid is violently corrosive to skin and mucous membranes and skin contact must always be avoided.

A sulphuric acid bath containing 10 per cent solution of sulphuric acid is used to anodize aluminium [illegible] producing an oxide film.

A potassium dichromate bath is used for sealing the anodic film with a protective coat. Recent research work suggests that the dichromate is carcinogenic especially if inhaled in powder form.

The cyanide pot is used for case hardening of steel. Sodium cyanide taken in liquid, vapour or solid form is lethal in very small amounts and for this reason numerous regulations surround its use. Antidotes consisting of iron perchloride and sulphate and magnesium carbonate are available but are unlikely to be effective unless exceptionally prompt treatment is carried out.

Electroplating

The electroplating carried on includes the deposition of chromium, copper, cadmium, tin, nickel and silver. Lead plating is infrequently done. Chromic acid is used in the fairly high concentration of 250 grammes per litre. The hazard is caused by the chromic acid which is carried with the air with the oxygen and hydrogen evolved from the electrodes. Inhalation of a concentration higher than 0·1 mg cubic metre may cause the typical perforations in chrome holes in the nasal septum. Contact with the liquid itself can cause chrome ulcers, indolent in nature and with the characteristic punched out appearance. Prevention of this hazard is by exhaust ventilation round the bath aimed to carry off the vapour before it can be disseminated into the atmosphere and by means of plastic floats to break up any turbulence in the bath itself. Protective clothing and adequate washing facilities are available and should be used. Although it often seems unnecessary because of the scarceness of real chrome holes, frequent inspection of nose and hands twice weekly by the foreman and fortnightly by the doctor remains essential for the early lesions. This examination need only take a few minutes but it is well worth while and serves in addition to keep the workman's awareness

potential danger above. Any small [illegible] should be sealed with lanoline or Vaseline and covered with waterproof plaster.

Copper, cadmium and silver are present in plating solutions as their cyanides, nickel and tin as their sulphates. Cadmium is a poison analogous to mercury and mercury, and passing into urine from the absorption of cadmium fumes. In silver plating an additional hazard to the cyanide is a mercurial salt used in the process. Repeated exposure to cyanides over long periods of time cause symptoms such as weakness, tremor and muscle cramps and eventually paralysis of legs and arms, loss of appetite and psychotic changes.

The waxing process for protection of metal not to be plated is not now dangerous since chlorinated naphthalene is no longer permitted.

The layout of this shop is such that in addition to tanks carrying the metal salts there are caustic soda tanks and sulphuric acid tanks used in the plating etching processes and a fresh water supply. Hydrochloric acid and nitric acid for cleaning purposes are also present in small quantities.

Radioactivity

The dangers from the action of the harmful rays of the gamma type depend upon the length and intensity of the exposure. There are two sources of danger in the yard: the luminizing room and to a minute extent the X ray plant. The X ray plant is used for flaw detection in metal castings. These are mostly all small and non ferrous in type and not castings are involved which demand very long exposures and hence possible high doses.

In the luminizing room the luminous paint is removed from the aircraft dials and these are then repainted with fresh paint made up in the department with varnish or gum arabic. Both these processes expose the workman to gamma rays from the radium salt which is present in a concentration of 30 micrograms/gramme of zinc sulphide. The paint is applied behind the cover of leaded glass and the paint is held in a lead crucible and a lead sheet covers the table which in turn is covered by smooth duralumin for cleanliness. In this connexion fluorescent paints and luminous paints must be clearly differentiated. The first are harmless substances which fluoresce when exposed to ultra violet light. The latter are luminescent because of the bombardment of the zinc salt molecules by the radioactive material. The modern tendency is, with certain exceptions, to paint aircraft instruments with fluorescent paint and to light these by an ultra violet lamp which may be switched off in order to minimize the accommodative effort a night flying pilot needs to make. Fewer and fewer instruments are now being luminized in order that the night flying pilot does not constantly have to alter his accommodation process which may take a second a significant time when flying at speed.

The gamma rays can either attack the body through the surface or actually from within the body when particles are accidentally inhaled or ingested. The Factories Luminizing Special Regulations 1947 control the methods of working with the paint, its storage and handling and the disposal of finished articles and waste material. Workmen are required to have a medical

[illegible] mouth and their hours of work [illegible] the British X ray and Radium Protection [illegible]

[illegible] mouth is reflected on the [illegible] The workman has [illegible] X ray film [illegible] badge which is sent to the National Physical Laboratory for determination. If the dose of radiation received during the [illegible] the badge has [illegible] Further safeguards should include the use of [illegible] Counter from time to time and examination of the room in the dark [illegible] a violet lamp. This reveals the fluorescent contamination [illegible] and the luminous compound is green. The maximum permitted [illegible] is 0·3 r per thirty five hour week and the workman has [illegible] period away from any radioactive exposure. This can be [illegible] high standard of personal cleanliness is allured to [illegible] all precautions taken and above all the dangers of radiation [illegible] than the hazard is minimized.

Dipping

The dipping of aircraft is carried out in a specially [illegible] with a heating system capable of controlling the temperature between [illegible] and 70° F and a ventilating system [illegible] 30 to 40 changes per hour. Heating is by force draught fans which blow in hot air with sufficient velocity to build up a slight positive pressure in the shop with the doors shut. The process involves the use of a fine spray of dope so that there is a distinct risk of inhalation of the dope when no mask is worn. The fluid is [illegible] constant composition and has varied considerably over the past thirty years. The use of chlorinated hydrocarbons such as tetrachlorethane in dope is now no longer allowed and illness from the use of this chemical has ceased. The dope used is a solution of cellulose now consists of a mixture roughly in the following proportions

Butyl acetate	40 per cent
Toluene	25 per cent
Amyl acetate	10 per cent
Butyl alcohol	25 per cent

Butyl alcohol can cause dermatitis, hepatitis, slight anæmia, [illegible] mucous membranes and an important conjunctivitis and definite and characteristic changes in the corneal epithelium leading to keratitis.

The workman has a regular medical examination and must wear a mask which should be as light as possible. He must not be allowed to consume food or drink at any time in the dope shop itself.

Until recently there has been a more or less general belief that toluene has both acute and toxic effects similar to those of benzene, though less severe. It seems however that much of the toxicity ascribed to toluene belongs to the benzene which it was contaminated and the blood changes observed were therefore a benzene effect rather than due to toluene itself. The chief danger from repeated exposure to toluene is on the nervous system, producing such chronic symptoms as giddiness and lack of sleep, intolerance

[illegible] fatigue, muscular uncoordination, mental confusion, staggering [illegible] nausea and headaches.

Amyl and butyl acetate both give rise to fairly severe local irritation to [illegible] and eyes and may cause headaches and vertigo but are not considered toxic to any extent.

The Surgery

The medical supervision is carried out by a part time medical officer and three assistants. Since 1941 when Fleetlands was built there have been but 7 certified cases of occupational dermatitis which necessitated exclusion on the Hurt Note. The irritating substances were said to be red lead, oil paraffin and paint remover. Skin reactions to mineral vaporizing oil, trichlorethylene oil and paraffin have been seen in the last year but have all responded quickly to treatment.

Dope chamber more simultaneous casualties during the war when the female employees suffered gastro intestinal upsets following upon the opening of a new drum of dope. Despite the frequent absence of a mask particularly in hot weather no recent illnesses from dope have been seen.

During these twelve years there have been two fatalities arising from an aircraft crash, half a dozen major fractures and forty two minor fractures. Foreign bodies in the eyes are common and run fairly consistently at seven to eight a week.

Conclusion

The emphasis in this article has been on the possible hazards in such a Factory as the Royal Naval Aircraft Yard Fleetlands and a misleading impression may have been given that it is a dangerous place to enter. The rarity of trouble however from any of the hazards mentioned speaks volumes for the safety precautions for the working conditions and for the care taken by supervisors and employees.

It is only by constant awareness of potential dangers and of such adverse working conditions as may exist that accidents are prevented and industrial health improved.

THE MEDICAL ASPECT OF THE KOWLOON FIRE DISASTER

BY

J. P. TURNER

Surgeon R.N.A. Fort Rosalie

On Christmas night 1941 a disastrous fire in a wooden squatters settlement rendered homeless in a matter of hours almost 60,000 individuals. Although their already pitifully small all was destroyed there were fortunately only 3 casualties of a fatal nature due directly to fire. Some 20 persons were crushed and trampled by disorderly crowds who however were remarkably

well controlled by the Hong Kong [illegible] and none of the 20 was seriously injured

Boxing Day morning saw [illegible] who had acted of gardener registration feeding and medical [illegible] The feeding problem being the most urgent was dealt with mainly by volunteer workers in the first instance among whom the Scouting Bodies figured very creditably H M S *Newcastle* with the permission of F O 2 i/c F E S the Captain and Commander released from ships duties *pro tem* the Deep Sea Rover Scouts under the leadership of Lieutenant Commander Stutters R N and for the first 72 hours subsequent to the disaster and prior to the non elaborate organization of the Civil Authorities these volunteers carried a huge burden as if they had been doing it all their lives

The sight of 60 000 queueing for meals of cooked rice vegetables and meat tins daily is something not easily forgotten Imagine as an instance the total populace of a fair sized suburb of an industrial city destitute hungry having lost their all and gave the same the added burden of language incompatibilities on both sides and you will appreciate the enormity of the task Within 72 hours the Hong Kong Government had organized two medical centres and staffed and equipped them to deal with sick and injured short of emergency major surgery

To appreciate the medical problem fully a short digression is necessary These people are all refugees among the million odd who had entered Hong Kong within the first eighteen months or so They are all within the lowest possible income group living in most precarious existence by labour in mushroom factories within the squatter settlements a fire in one of which it is thought started the conflagration Their attitude is completely alien to the Occidental who has some little feeling for his fellow creatures These people faced with the utmost struggle to exist at totally the end of any consideration save self and immediate progeny It is equally remarkable that despite a huge birth rate and a very high infant mortality rate both occurrences being quite calmly accepted there is most highly concerned with the health of their children Death when it occurs is quite stoically accepted but they strive to the limit to preserve a sick child although it forms a drain upon their very slim resources It is the living example of the instinctive volition of the Human Race to preserve itself despite any given adversity

On 30th December the existence of the Government Medical Centre became generally known and we saw the first 100 of the 1 500 cases who were to pass through in the next fortnight It is noteworthy that for the first week every patient presented had some floridly manifest disease but latterly an attitude which still exists amongst National Health patients has arisen A mother will present herself and perhaps one sick child and insist for good measure that we check up the whole tribe Whether it is a something for nothing attitude or whether genuine anxiousness to be reassured upon the general health of Willie John James Annie Mary and the latest unnamed infant I have been unable to establish

After seeing 1,500 cases one can analyse the general medical problem with a fair degree of accuracy.

70 per cent. of all cases seen were children under 12 years. Of these [illegible] per cent. were suffering from chronic bronchopneumonia but surprisingly showed very little pyrexia, this being in the order of 100° F.

The organism under field conditions was not isolated but empirically proved highly penicillin sensitive. With graduated doses according to weight roughly estimated complete cure of all symptoms and marked regression of all signs was obtained with injections of Procaine Penicillin G 300,000 to 600,000 Units given together with Tussi pro infant B.P. in similarly graduated doses. Of all children suffering from the bronchopneumonia syndrome cure has been obtained in every case except 6 which arrived in a moribund state and died in hospital the same day.

Some 40 per cent. of all cases seen were children under 12 years suffering from diarrhœa without blood, but with mucus in the stool having up to 12 stools in twenty four hours. This was at first thought to be an infective disease but I now think that a large contributory factor is the harder quality rice being issued as distinct from the congee in which these people are used. Kaolin pulv. 1 oz. rotundum with small graduated doses of tab. sulphaguanidine is completely efficacious.

A large number of children 10 per cent. approximately present with a combination of impetiginous eczema of the scalp which not infrequently is co-existent with deep scalp abscesses and otitis media and externa. It is interesting to see that with huge fluctuant tumours of the scalp aspirations of which produce yellowish white pus in surprising amounts the child suffers minimal pain and discomfort and no pyrexia worth recording. Aspiration and refill with 500,000 units crystalline penicillin is efficacious apparently painless and certainly economical with the drug. The impetigo responds to simple measures with G.V. and sulphamidamide pulv. and the mothers concerned seem to have a great pride in displaying their offspring from tunnel very short dashed artistically with violet stain. It has become almost a mark of distinction.

At this juncture one may well intersperse an observation concerning the attitude of these unfortunate people towards the "Europa Dwa" Doctors. There is no patient doctor relationship. The Government has provided a free Medical Service and although no taxes or other levy is collected from these people they consider such a service their right and its dispensers merely Government servants appointed to dispense that right. Only one man an octogenarian said to my interpreter "Thank the Doctor." I have vague recollections of a similar attitude springing up at home to the N.H.S. There is also a marked faith in injections which are much preferred to the "bottle and plum advice" say with regard to the obvious overfeeding of a baby is a waste of time. The patient came for medicine and medicine she *will* obtain for her infant or subject the doctor to quite a pantomime of vituperation.

Of all children seen one was impressed by the total absence of the acute

abdomen the [illegible] of the congenital heart or other disease and the general physical [illegible] married later by poor conditions The general impression [illegible] some ill children cannot possibly be born perfect is that the congenitally [illegible] allowed child is quietly disposed of by the parent

The adults formed a much smaller group of patients seen than did the children The [illegible] was a most uncommon occurrence was the octogenarian who [illegible] The highest age group secured to be below 70

Of the adults coming to middle aged males suffering with chronic pulmonary tuberculosis formed a distressingly large group Most were in a state which cried aloud for hospitalization but with the Colony pressed to the limits of its resources to look after its own population of 3 millions increased daily by hundreds of refugees beds are at a premium and staff worked far beyond what could be expected at home I have managed to hospitalize some few T B sufferers who had large and frank hæmoptysis cavitation and collapse due to spontaneous pneumothoraces but how many worse cases I have deprived of beds I shudder to think One ward built to accommodate 2 patients is dealing with 76 cases and it is a literal impossibility to squeeze in one extra The waiting lists for admission are thousands strong many of whom will be dead long before they reach the head of the list In the well ordered Services we are too used to having the best and plenty of it to conceive of such a situation

The Hong Kong Government is doing about with hospital accommodation but is being beaten by the rapidity with which numbers increase

Adult women formed a comparatively small group and these mainly due to poor conditions over breeding and over work Emphysema with chronic bronchitis was very common amongst them and they formed the largest group of sufferers from rheumatism Trunk herpes though not common occurred with classic angular stomatitis sore tongue and swollen ankles I c c Ext Vit B injections followed by a course of multivitamin tablets proved gratifyingly effective Many bordered on rheumatism but these were not the presenting symptoms

Gynæcoid conditions were practically non existent despite the fact that many mothers delivered their babies in the streets wherein there will exist until accommodation can be built Not one case of puerperal fever came to light

Heart disease similar to rheumatic hearts but without a history of rheumatic fever was occasionally picked up I am inclined to think that rheumatic heart can occur without a history of rheumatic rheumatic fever and if it does so what organism or series of circumstances can result such a rare occurrence The occurrence was in the order of 1 per cent of all patients seen and in the age group 14 20 years predominantly amongst females

It should be appreciated that all cases discussed were purely empirically judged no facilities for elaborate tests being available

No single case of congenital disease in the retina and only [illegible] I am unaware whether sufferers sought advice and treatment elsewhere

No single case of lues (or other body parasite of that nature) unfortunately was seen which is surprising as the general standard of cleanliness was low

The only case of infectious disease was a child male of 12 years with mumps.

Many children had actively discharging tuberculous glands in the neck and were referred to hospital for expert advice and treatment. Most patients declared that the glands had been present only for one to three months but well established sinuses and matting were noted. These children will receive priority treatment at the already overworked clinics.

Latterly the bronchopneumonia syndrome has begun to be superseded by a virulent throat organism productive of almost strawberry tongue highly inflamed tonsils fauces pharynx toxic symptoms accompanied by pyrexia and an irritating dry cough. Fortunately the organism is penicillin sensitive and its administration ends the symptoms completely within twenty four hours although the signs take three to four days completely to abate.

Penicillin Sensitivity

It will be noted that nearly all the organisms respond readily to the administration of penicillin in adequate though not wasteful dosages. I formed the impression that this may in part be due to the soil patients who have had little or no medical care and who already have a high resistance to infection requiring that it be merely boosted by an antibiotic. The M.A.B. series were never tried except in the gastro intestinal cases because of the difficulty of ensuring that patients imbibed a sufficient quantity of fluid to avert crystallization in the kidney and renal complications. Partly the response must be due to the totally rural nature of the infecting organisms which have never had contact with the antibiotics and thus no opportunity to develop resistance.

Conclusions

It is most fortunate that to date the weather has been clement. Otherwise considering the exposed one would expect much more serious illness amongst the refugees. As it is they are surprisingly healthy tolerant of the adverse conditions and hopeful of accommodation in the near future.

No typhoid has broken out and there is at present no indication that one will do so which is most fortunate.

Conclusions with the general impression that only the surface of the real problem so far had been scratched and that in the Colony amongst the population there is a wealth of material just now embarrassing in number but [illegible] and gold mine to the doctor.

I should like to record my gratitude to the Commodore Superintendent Hong Kong the Director of Medical Services Hong Kong and to my Captain A. R. Wheeler R.D. R.N.R. who granted me time and facilities to work at the Government Medical Centre and spend a most interesting and valuable two weeks.

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CLASSIFIED MEDICAL REFERENCES IN THE WORKS OF SHAKESPEARE

BY

Surgeon Commander J. W. L. CROSFILL, R.N.

PART VII

Jakes

A jakes was a lavatory. Shakespeare puns on the name of Ajax, a pun d'esprit which was used by an Elizabethan courtier Sir John Harrington who published in 1596 his "An Anatomy of the Metamorphosed Ajax" wherein by a Tripartite Method is plainly, quickly and demonstratively the Ground explained and enjoyned by Pen, Plot and Precept how unsavoury Place may be made sweet, noisome Places much wholesome, filthy Places made cleanly.

This publication, written in humorous vein, is a description of a water closet with detailed diagrams and costings. An interesting feature of the design is the anterior notch cut out of what is otherwise a round seat, a feature found in only the more expensive modern sanitary fittings, which is described by Harrington as "the seat with a prick dexant for elbow room."

Provision was not made for any form of main drainage. The effluent discharged into a cellar in which six inches of water had to be maintained, the whole to be cleared out at noon and night.

918 *Kent* — I will tread this unbolted villain into mortar, and duct it with wall of a jakes with him. *King Lear* II. 2 (unbolted coarse)

919 *Thersites* — But yet you look not well upon him; for whosoever you take him to be, he is Ajax.
Achilles — I know that fool.
Thersites — Ay, but that fool knows not himself. *Troilus and Cressida* II. 3

(Still [illegible] the nature [illegible] the [illegible])

Jaundice

The belief that jaundice could be caused by jealousy or emotional upset still persists in the modern term "green with envy" which nowadays is used merely to express a degree of envy instead of literally. Formerly however it was believed literally that jaundice actually occurred. The belief was a survival of the old humoural theory, but it is surprising to realize that it was still a professional belief as recently as Victorian times. Bucknill [3] in his "Shakespeare's Medical Knowledge" states that jaundice is caused at times by mental unrest and that he has known bad news cause jaundice in a few hours.

In 1844 Dr Thomas J Graham in giving the causes of Jaundice, which, in the main agree with modern views states "Great mental agitation will cause it in those disposed to it

Gerard would probably have prescribed Monks Rubarb or Broome Monks Rubarb or Patience is an excellent wholesome pot herb for being put into the pottage in some reasonable quantity it helps the jaundice and such like diseases proceeding of cold causes

That worthy Prince of famous memory Henry VIII King of England was wont to drink the distilled water of Broome flowers against surfets and diseases thereof arising Sir Thomas Fitzherbert Knight was wont to cure the drinke jaundice with this drinke onely Take as many handfulls (as you think good) of the dried leaves of Broome gathered and brayed to pouder in the moneth of May

920	*Iago*	My humour shall not cool I will incense Page to deal with poison I will possess him with yellowness for this revolt of mine is dangerous that is my true humour —*Merry Wives of Windsor* ii 3
921	*Ulysses*	What grief hath set the jaundice on your cheeks ?— *Troilus and Cressida* i 3
922	*Posthumus*	This yellow Iachimo —*Cymbeline* ii 5
923	*Antipholus*	Hold this companion with the saffron face Revel and feast it at my house to day ?—*Comedy of Errors* iv 4

Joints of Elephants

924	*Helena*	The elephant hath joints but none for courtesy his legs are legs for necessity not for flexure —*Troilus and Cressida* iii 3

It was an old belief that the elephant was unable to sleep lying down because it was unable to bend its knee joints and therefore had to sleep leaning against a tree

The olefawnte that bewyth not the kneys" The Dialogues of Creatures Moralysed.

Stubborn as an elephant's leg no bending in her" All is Lost by Lust 1633

That an elephant hath no joints The first shall be of the elephant, whereof there generally passeth an opinion it hath no joints and this absurdity is seconded with another that being unable to lie down, it sleepeth against a tree [9]

Kibe (A Sore Heel Chilblain)

925	*Hamlet*	The toe of the peasant comes so near the heel of the courtier he galls his kibe —*Hamlet* v 1
926	*Fool*	If a man's brains were in's heels were't not in danger of kibes ?—*King Lear* i 5
927	*Antonio*	If twere a kibe 'Twould put me to my slipper —*Tempest* ii 1
928	*Falstaff*	Well sirs I am almost out at heels
	Pistol	Why then let kibes ensure —*Merry Wives of Windsor* i 3

"Tabnio [illegible] for the tooth ache if the [illegible] rubbed with a linnen cloth [illegible] in the juice and after [illegible] of the leaves laid into the place [illegible] Likewise there is [illegible] of the leaves that healeth worm galls kibed heels and [illegible]"

KING'S EVIL KING'S TOUCH FOR

June 23rd 1660 To my Lord's lodgings where Tom [illegible] came to me and there staid to see the King touch people for the King's evil But he did not come at all it rained so and the poor people were forced to stand all the morning in the rain in the garden Afterwards he touched them in the banqueting house April 13th 1661 Met my Lord with the Duke and after a little talk with him I went to the banquet house and there saw the King heale the first time that ever I saw him do it which he did with great gravity and it seemed to me to be an ugly office and a simple one

April 10th 1667 To the King's little chapel and afterwards to see the King heal the King's Evil (wherein no pleasure I having seen it before)

PEPYS DIARY

The King's Evil or Scrofula, was tubercular disease of the glands of the neck The practice of the King's touch as a cure started in England in the reign of Edward the Confessor 1042 1066 The ceremony included the presentation to the sufferer of a golden touch piece to be hung round the neck The last English royalty to heal by the Touch was Queen Anne 1702–1714 Among her patients was the infant Dr Johnson who was born in 1709 Charles II touched some 92 107 sufferers during his reign according to the account by John Browne in his Adenochoirandologia or Kings Evil Swellings 1684 The surgeon to Charles II was one Richard Wiseman who perhaps somewhat tactfully writes I have myself been an eye witness of hundreds of cures performed by His Majestie's Touch stone without any assistance of Chirurgery'

Queen Elizabeth with the careful economy of the housewife reduced the size of the golden touch piece

Great faith was placed in amulets and rings

Mediaeval rings were blessed by Henry VIII Queen Elizabeth was herself the recipient of one such ring given to her by Hatton the Lord Chancellor who with a directness of speech that was acceptable at that period said that it was to be worn between the sweet dugs Its virtue was that it expelled infectious airs

Disraeli in his Curiosities of Literature writing of Royal Proclamations says Rushworth in his Second Volume of Historical Collections has preserved a considerable number of the proclamations of Charles the First of which many are remarkable but latterly they mark the feverish state of his reign One regulates access for cure of the King's evil—by which his majesty, it appears, hath had good success therein but though ready and willing as any king or queen of this realm ever was to relieve the distresses of his good subjects his majesty commands to change the seasons for his 'sacred touch from Easter and Whitsuntide to Easter and Michaelmas as times more convenient for the temperature of the season'

929 *King* — O be sick great greatness
And bid thy ceremony give thee cure!
Think st thou the fiery fever will go out
With titles blown from adulation?
Will it give place to flexure and low bending?
Canst thou when thou command st the beggar s knee
Command the health of it? —*Henry V* iv 1

930 *Doctor* — Ay sir there are a crew of wretched souls
That stay his cure their malady convinces
The great assay of art but at his touch
Such sanctity hath Heaven given his hand
They presently amend

Macduff — What s the disease he means?
Malcolm — 'Tis called the evil
A most miraculous work in this good King,
Which often since my here-remain in England
I've seen him do How he solicits Heaven
Himself best knows but strangely visited people
All swoln and ulcerous pitiful to the eye
The mere despair of surgery he cures
Hanging a golden stamp about their necks
Put on with holy prayers and 'tis spoken
To the succeeding royalty he leaves
The healing benediction —*Macbeth* iv 3

Knee Joint

931 *Hamlet* — And crook the pregnant hinges of the knee —*Hamlet* iii 1

Labour *See* Birth, Delivery Death in

Language of Signs

932 *Titus* — Thou map of woe that thus dost talk in signs!
When thy poor heart beats with outrageous beating,
Thou canst not strike it thus to make it still
Wound it with sighing girl kill it with groans
Hath Marcus what she says
I can interpret all her martyred signs
She sees she drinks in other drink but tears
Brinds with her sorrow mash upon her cheeks
Speechless complainer I will learn thy thought
In thy dumb action will I be as perfect
As begging hermits in their holy prayers
Thou shalt not sigh nor hold thy hands to Heaven
Nor wink nor nod nor kneel nor make a sign
But I of these will wrest an alphabet
And by still practice learn to know thy meaning —
Titus Andronicus iii
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]

LAYING OUT

[illegible] their [illegible] sound for my [illegible]
[illegible] saw herself
[illegible] Cover their faces.—King [illegible]

LEECHES.

The leech has only ceased to be officially [illegible] as a therapeutic agent and is still used occasionally. [illegible] popular during the XIXth Century, due it is said to [illegible] Broussais. Forty million leeches are said to have been [illegible] during 1833.

The following is taken from Chabrol's Dictionaire Medical [illegible]: 'As these little animals are very serviceable in [illegible] practice it is necessary that I should say a little about applying them &c. They are at times applied in all cases where [illegible] is necessary and particularly to plethoric where cupping glasses cannot be applied. In acute inflammation of vital organs their use should never be neglected, for however important general bleeding is in these instances the drawing of blood from the immediate vicinity of the inflamed part by means of leeches is of great consequence.

It is sometimes extremely difficult to make them bite, which they will never do when they are sick. The best mode of applying them seems to be to take them out of the water for some minutes before they are to be used and to dry them well with a very soft cloth directly before they are applied. The part should also be well cleaned with soap and water, then washed with a little pure water and made very dry. If there be any hairs on the spot these must be close shaved. When they nevertheless will not readily fix, or where it is wished to apply them very exactly on one particular spot, putting them into a large quill cut at both ends, and applying the end at which the head of the animal lies to the part, with the finger on the other end is an excellent mode of making them bite. The quill is withdrawn after they are firmly fixed. Another excellent mode of making them fix directly on any particular spot is said to be by touching the part with the bloody spongy point of a quill recently taken from a pigeon's wing. Putting them into porter for a few minutes before applying them is likewise a good way to make them bite. They drop off spontaneously whenever they have gorged themselves with blood, and they may be separated at any time by sprinkling a little salt on the head. Very few leeches can draw more than half a fluid ounce of blood, and therefore it is necessary, in order to increase the quantity, to keep the orifices bleeding by bathing them with hot water. After the leeches drop off, the application of a very minute quantity of salt makes them disgorge all the blood they have sucked, and if they be immediately thrown into clean water, and this repeatedly changed for three or four times, they soon recover their health and vigour. Dr. Johnson, who has written a treatise on the economy of the medicinal leech, advises the use of vinegar instead

al salt which [illegible] apt to blister the lips of the leech as salt does preventing it from sucking for some considerable time

"It is worthy of being generally known that broth made with the fattest part of tripe is an admirable wash for leech bites soothing and healing them very rapidly

Apart from their medicinal use cases of accidental leech bite have been recorded wherein leeches have been discovered in the vagina pharynx and ear They may attach themselves to the legs of waders in stagnant waters The juice of a moistened cigarette is said to be an instantaneous release mechanism A curious fact was noted by Laennec the inventor of the stethoscope 1781 1826 during his use of leeches which is recorded in his Treatise on the Diseases of the Chest It occasionally happens that both local and general bleeding in place of proving derivative seems on the contrary to excite haemorrhage I have noticed the return of the menses and aggravation of the monthly discharge during the application of leeches to the pit of the stomach General bleedings appear sometimes to have a like effect on haemoptysis

934 *Palm* 1 The blood of mine that is shed by him be sucked dry
From me with leeches let them break and fall
On me with that corruption!—*Two Noble Kinsmen* 1 2.
(Arcite speaks)

Leg

145 *Sir Toby* I did think by the excellent constitution of thy leg it was formed under the star of a galliard
Sir Andrew Ay so is strong *Twelfth Night* 1 3
(Sir Andrew's dance The constitution which implied the legs of a hyperbolic physique in fashion)

Legitimacy

[illegible] Sirrah your brother is legitimate
Your father's wife did after wedlock bear him
And to to deceive father mother all this twelve winters
Which half has run the hazard of all husbands
That marry wives—*King John* 1 1

Leprosy

Chapters XIII and XIV of Leviticus describe in detail the diagnosis [illegible] treatment and ritual associated with leprosy in Biblical times Stubbs and Bligh in Sixty Centuries of Health and Physick remark that the only public measures adopted in the case of leprosy in the Middle Ages were those detailed in Leviticus The leper was not allowed to go where he wished he had to wear distinctive clothing and to warn people of his approach by a clapper Lazarettos were built for the retention of these sufferers a measure which in conjunction with the absence of marriage in time led to the disappearance of the disease in Europe The exaggerated idea of the infectivity of leprosy or more strictly speaking the risk of infection by

[illegible] throughout the ages. Even today there is [illegible] that the regal leprosy as highly contagious. It is [illegible] diseases in transmitted by casual contact.

937 *To* [illegible]

938 *T* [illegible]

939 *Apemantus* [illegible]

940 *Queen* [illegible]

941 *Scarus* [illegible]

Lust of Man

942 *Jacques* [illegible]

[illegible] fundamental idea in this passage [illegible] life of man is divisible into [illegible] stages is not in original [illegible] a translation of the line [illegible] Totus mundus [illegible] was inscribed over [illegible] the theatre The classification [illegible] into arbitrary stages [illegible] parts of [illegible] in the case of Varro [illegible] Roman into six

[illegible] vivid description and the [illegible] to achieve this makes [illegible] speech one of the most [illegible] best known in the whole [illegible] plays Although perhaps not [illegible] clinical appreciation the [illegible] advancing senility would be [illegible] merit to better)

Life, Strings of

943 *Lear* — His grief grew puissant and the strings of life
Began to crack —*King Lear* v 3

944 *Queen* — Who gently would dissolve the bands of life
Which false hope lingers in extremity —*Richard II* ii 2

945 *Queen Elizabeth* — Harp on it still shall I till heart strings break —*Richard III* iv 4

946 *Kent* — Such smiling rogues as these
Like rats oft bite the holy cords in twain
Which are too intrinsicate unloose —*King Lear* ii 2

Lips

947 *Roderigo* (referring to negro lips Othello was a Moor) — What a full fortune does the thick lips owe —*Othello* i 1

948 *Desdemona* — Alas why gnaw you so your nether lip?
Some bloody passion shakes your very frame
These are portents —*Othello* v 2

949 *Duke* — Diana's lip
Is not more smooth and rubrous thy small pipe
Is as the maiden's organ shrill in sound —*Twelfth Night* i 4

Liver

The liver was thought to be the seat of courage and love and also the site of blood formation A bloodless or pale liver thereby implied cowardice.

950 *Macbeth* — The Devil damn thee black thou cream faced loon!
Where got'st thou that goose look?

Go prick thy face and over red thy fear
Thou lily liver'd boy —*Macbeth* v 3

951 *Duke* — Alas their love may be call'd appetite —
No motion of the liver but the palate —
That suffers surfeit cloyment and revolt —*Twelfth Night* ii 4

952 *Fabian* (refers to the deception practised on Malvolio and the assurance that his amatory ideas with regard to Olivia are now arrested) — This wins him liver and all —*Twelfth Night* iii 5

953 *Fabian* — to exasperate you to awake your dormouse valour
To put fire in your heart and brimstone in your liver —*Twelfth Night* iii 2

954 *Sir Toby* — and yet you find so much blood in his liver as will
clog the foot of a flea I'll eat the rest of the anatomy —
Twelfth Night iii 2

955 *Hamlet* — for it cannot be
But I am pigeon liver'd and lack gall
To make oppression bitter —*Hamlet* ii 2

956 *Ro*[illegible]

957 *Go*[illegible]

958 *King Lear* —

959 *Pistol*

960 *Bru*[illegible]

961 *Boy*

962. *Leontes*

963 *Friar*

964 *Bassanio*

965 *Lord Pistol*

966 *Soothsayer Clarence*

967 *Troilus*

968 *Rosalind*

969

Love Potions (Aphrodisiacs Philtres)

970 *Brabantio*

971 *Brutus*

972 *Duke*

973 *Othello* I will a round unvarnished tale deliver
Of my whole course of love what drugs what charms
What conjuration and what mighty magic —
For such proceeding I am charged withal —
I won his daughter with —*Othello* i 3

974 *Brabantio* I therefore vouch again
That with some mixtures powerful o er the blood
Or with some dream conjured to this effect
He wrought upon her —*Othello* i 3

975 *Falstaff* If the rascal have not given me medicines to make me
love him I'll be hanged it could not be else I
have drunk medicines —*Henry IV* Pt I iii 2

976 *Oberon* love in idleness
Fetch me that flower the herb I show'd thee once
The juice of it on sleeping eyelids laid
Will make on man or woman madly dote
Upon the next live creature that it sees —
Midsummer Night's Dream ii 1

977 *Oberon* ere I take this charm off from her sight
As I can take it with another herb —*Midsummer Night's Dream* iii 1

978 *Falstaff* My shoe with the black scut Let the sky rain potatoes let it
thunder to the tune of Green Sleeves hail kissing-comfits and
snow eryngoes let there come a tempest of provocation I will
shelter me here —*Merry Wives of Windsor* v 5

979 *Thersites* How the devil luxury with his fat rump and potato finger tickles
these together Fry lechery fry!—*Troilus and Cressida* v 2

(The potato referred to is the sweet potato which was known in England before Sir Walter Raleigh brought over the Virginian or common potato)

The potato roots are of mighty and lusty nourishing parts and do strengthen and comfort nature whose nourishment is as it were a mean between flesh and fruit but somewhat windy yet being roasted in the embers they are much alter wardness especially being eaten sopped in wine

These roots may serve as a ground or foundation whereon the cunning Confectioner or Sugar Baker may work and frame many comfortable delicate Cimmerfits and restorative sweet meats Notwithstanding howsoever they be dressed they comfort nourish and strengthen the body Gerard on the sweet potato

Of Eringoes The roots candied in pieces with sugar as hereafter I will with our exceeding good to be given to old and aged people that are consumed and weakened with age and which are naturally moist or cold there are also good for other sorts of people that have cold liver or appetite very

An Eringoes is given under Hysterica Fan diseases of Shakespeare's daughter treated by herbs shared Dr John Hall As part of a formidable list of treatment he lists Jar the Cumbae Lavan was used Plin Cleresuch Dose six tastins yea at any hour it was read drinking the following Stilled Wine after

Ingr

Lunators Black hore Water Cresses Scurvy grass Betony Agrimony Harts tongue each Mos Bark Capparis Nib Tamarin each Six Roots of Fennel Parsley each Six Maiden Eingoes Calamus Aromaticus Eringoes each six Yell w Sanders Red Coral Shavings Ivory each dri Cloves Mace Cinnamon Ginger each Six Celeraeh Flowers of Broom Rosemary Marjoram Pimpinella each pi Juniper Berries Steel prepared are dry in train Wh in Wine Red wine the rest together at the first in Bal Mus for eight days at least Firing them twice a day after sunrise at three or four times and the remains and Saffron dissolved drawn out of Scurvy grass water or Meet Alexanders Sugar sufficient to sweeten it Dose two or three spoon full in the beginning which may be increased if there be need
And by these she was cured

[illegible]

Lunacy

[illegible] *Iago* Will [illegible] you, by no drift of circumstance,
Get [illegible] him why he puts on this confusion
Grating so harshly all his days of quiet
With turbulent and dangerous lunacy?—*Hamlet* [illegible]

[illegible] *Richard* And thou a lunatic lean-witted fool
Presuming on an ague's privilege

Darest pale our cheek, chasing the royal blood
With fury from his native residence.—*Richard II* [illegible]

Lungs

982 *Hamlet* Am I a coward?
Who calls me villain? breaks my pate across?
Plucks off my beard, and blows it in my face?
Tweaks me by the nose? gives me the lie i' the throat
As deep as to the lungs?—*Hamlet* ii. 2

983 *Iachimo* The furnaces
The thick sighs from him, whiles the jolly Briton
Your lord, I mean,—laughs from's free lungs.—*Cymbeline* [illegible]

984 *Adrian* The air breathes upon us here most sweetly.
Sebastian As if it had lungs, and rotten ones.
Antonio Or as 'twere perfumed by a fen.—*Tempest* ii. 1

(*To be continued*)

A LARGE PRIMARY FIBROSARCOMA OF THE HEART

BY

Surgeon Commander F B NICOL, R N

AND

Surgeon Lieutenant P T PERKINS, R N

PRIMARY tumours of the heart have been classified as myxoma fibroma lipoma angioma rhabdomyoma and sarcoma Strauss and Merklen (1944) in their publication of 3 cases of auricular polyps 2 of them myxoma and 1 myxosarcoma stated that only 164 cases of primary tumour of the heart had been reported Ivan Mahaim (1946) gives details of 240 polyps of the auricles that had been published from 1854 onwards but 52 of these he calls indeterminate 38 thrombus 1 Hématome valvulaire and 24 néoplasme secondaire which still leaves 135 polyps of the auricles acceptable to him as primary neoplastic polyps 82 of them were called myxoma 20 sarcoma 8 fibroma 4 angioma and 4 lipoma Then of non polyposa varieties he mentions 11 fibromata and 8 lipomata He says that true angioma is very rare Since rhabdomyoma of the heart is usually in the form of multiple nodules and is commonly accompanied by tuberose sclerosis it is therefore more in the nature of a developmental abnormality Mahaim lists 67 published cases of non polyposa sarcoma Of the 87 sarcomata polyposa and otherwise 24 had been called either spindle celled sarcoma or fibrosarcoma, 17 round celled sarcoma 14 either giant celled or polymorphic celled sarcoma, 7 either myxosarcoma or fibromyxosarcoma and 7 rhabdomyosarcoma a few had been called angiosarcoma or leiomyosarcoma there was one published in 1889 that was claimed to be a primary melanoma of the heart with widely spread metastasis which seems unlikely in others the type of sarcoma had not been specified

Case History —A naval pensioner aged 62 was admitted to Royal Naval Hospital Plymouth on 29th September 1952 with the following history

In June 1952 after previous good health this patient developed a sudden attack of precordial pain whilst walking which radiated to the base of the neck and was aggravated by exertion He was regarded as a case of myocardial infarction by his general doctor and rested in bed for a month He then began to get up and his doctor noticed his pulse to be slightly irregular and that there was some dilatation of the heart He was overweight and was being treated for this but soon developed thirst loss of appetite and became so thirsty that he lost a lot of weight and gave rise to concern His urine was tested for sugar on several occasions and was negative One week before his admission to hospital he became jaundiced and very weak Two days before admission he had sudden severe epigastric pain radiating to the precordium and accompanied by shock This was regarded as another myocardial infarct and led to his admission to hospital

Fig [illegible]

Past M [illegible] N [illegible]

On Examination [illegible] and urinary [illegible]

Cardiovascular [illegible] radial arteriosclerosis [illegible] place in the [illegible] easily palpable but not [illegible] Mitral [illegible] only No jugular [illegible] congestion [illegible] oedema [illegible] No murmurs

Respiratory System —A few fine crepitations [illegible] both lung bases

Abdomen —Scar from repair of [illegible] otherwise normal

Central Nervous System —N A D

Lymph Glands —No enlargement

Investigations —Blood urea—76 mg per [illegible]

X ray Chest — There is marked enlargement of the transverse [illegible]

X-ray abdomen —N A D

E C G —(Standard leads only) Apparent [illegible]

Haemoglobin —15 4 grammes per cent (104 per [illegible]

R B C 5 390 000 c mm W B C 19 200 c mm (D 78 L 6 M 1)

Urine —Albumin trace Bile pigment + Sugar nil

Progress —He became increasingly drowsy and [illegible] the jaundice was less marked three days after admission The urine which had been clear of sugar to daily testing showed a strong reduction (orange to Benedict s) on the

[illegible]

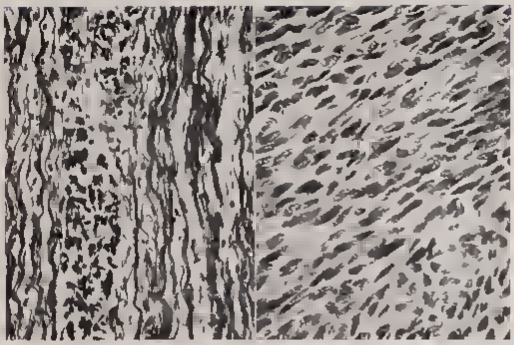
[illegible]

SUMMARY OF NECROPSY

[illegible] Acute hemorrhagic pneumonitis. Primary fibrosarcoma of heart. Congestion of liver, kidneys, and bases of lungs. Stomach, intestines, urinary, pituitary, pituitary, and other tissues normal. No neoplastic tissue found anywhere outside the [illegible].

The Heart.—The growth is grayish white and [illegible] it is hard, with a whorled pattern on the cut surface, but there are a few areas that are soft. It is composed of sheets and lumps that are [illegible] one another. One part of it occupies all the interventricular septum [illegible] its upper posterior region, thus missing the foramen ovale, which is patent, the patency (about 0.5 cm. diam.) being the common ventricular opening of no practical importance.

The part of the growth in the septum is in the form of a sheet which has caused great thickening of the septum (3 cm. thick) and is covered everywhere by smooth normal endocardium. Extending from this there is a very hard



[illegible]

smooth [illegible] projecting into the mitral orifice and attached to the [illegible] pedunculated mass (3 × 1·7 cm and 1 cm high) projecting into the [illegible] wall of the right atrium surround the mouth of the coronary sinus [illegible] it but not invading it without thrombosis. The tricuspid and mitral valves themselves are normal.

Extending upwards from the membranous septum between the left [illegible] on the aortic side and the aorta and pulmonary artery on the other there is a much larger mass of the growth (about 12 × 9 cm) lying in the pericardial cavity; this part almost completely surrounds the pulmonary artery and ascending aorta and ascending part of the aortic arch and completely surrounds and compresses the right pulmonary artery and vena but does not invade them. Its upper pole lies at a level about 1 cm above the [illegible] of the aortic arch and 1 cm above the tracheal bifurcation. But it is all confined within the parietal pericardium. A large mass of the intrapericardial part of the growth is a mushroom shaped mass (1 [illegible] to 1 cm) lying over the anterior wall of the right atrium and over the right auricular appendage junction and the right side of the ascending aorta. Another part is a pedunculated tongue shaped mass (7·7 × [illegible] × 3 cm) which lies in the pericardial

[illegible] of the anterior wall of the left ventricle [illegible] [illegible] easily broken between the growth and the parietal pericardium There is only one nodule of growth completely separate from the main mass and therefore presumably a metastasis this measures 1 7 × 1·5 × 0·8 cm. and projects from the visceral pericardium of the right border of the right ventricle the underlying myocardium There is no appreciable hypertrophy or dilatation of any cardiac chamber There are only a few flecks of fatty atheroma in the main coronary arteries and none of them has produced stenosis The growth overhangs the right and left coronary arteries and is closest to the latter at its bifurcation into descending and horizontal branches but is not attached to them In the aorta there is a moderate degree of atheroma not in excess of what is usual at the age of 62

While much of the growth with its small spindle nuclei scanty cytoplasm and abundant often thick, collagen fibres, looks like a fibroma that has been growing slowly for a long time it seems justifiable to class it as sarcoma because although no mitoses seen there are areas very rich in large nuclei there is focal invasion by the latter tissue between cardiac muscle fibres and there is the one separate nodule which must be regarded as a metastasis

For two reasons it appears probable that the growth arose in the interauricular septum The disposition of its parts suggests that they radiated from the septum into the pericardium and into the mitral and tricuspid areas The commoner primary pedunculated myxofibroma of the heart arises in the interauricular septum

In the pancreas there are the characteristic changes of acute hæmorrhagic pancreatitis with numerous fat necroses in it and in the omentum and mesentery There does not appear to be any relation between the cardiac neoplasm and the pancreatitis

Comment

Primary tumours of the heart are rarely diagnosed in life and this case was no exception Death was due to acute hæmorrhagic pancreatitis, a finding which explains the attack of epigastric pain collapse transient jaundice hyperglycæmia and leucocytosis

It is characteristic of cardiac neoplasms that gross involvement of the heart causes little disturbance of function and this was so in the present case The auricles are frequently the site of origin and the interauricular septum appeared to be incriminated here The apparent absence of P waves in the electrocardiogram is interesting in view of the heavy auricular involvement

We are indebted to Dr W W Woods Consultant in Morbid Histology for the necropsy report to Mr A L Gallup for the photographs and to Surgeon Rear Admiral T N D'Arcy for permission to publish this case

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DENS IN DENTE ASSOCIATED WITH DENTAL CYST

BY

Surgeon Commander (D) D. L. GOODRIDGE, R.N.

A [illegible] aged 28 reported asking for a filling, to be put in his upper right lateral incisor. Examination showed the tooth to be discoloured and slightly misshapen in its mesial aspect, from which surface a synthetic filling had recently come out. There was a cavity in the depths of the cavity a black stained mark which was unlike [illegible] exposure. It was normal. X-rays were taken to see the apical [illegible] in order that the practicability of root filling could be assessed. The apical area was as shown in fig. 1. A diagnosis was then made of Dens in Dente together with a small lateral cyst in view of

(1) The distorted apex.
(2) The undermined pulp chamber.
(3) The misshapen crown and thick spot.

It was decided to remove the tooth and scrape the cyst. Because of the academic interest in which it presented the specimen was passed to Dr. [illegible] who kindly dissected under intravital microscope. [illegible] with the patient.

A mandible of burial [illegible] was removed and the tooth and cyst were lifted forward. The cyst wall separated completely from the tooth and came out in one piece. The tooth was closed with three sutures and healed uneventfully.

Microscopic examination of the tooth showed that the distorted apex was in fact hypertrophied tissue of [illegible] and [illegible] surrounding the root apex. The cyst wall was of approximately 2 mm. in thickness, tough, walled and had some cholesterin crystals in its contents.

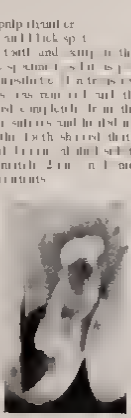

FIG. 1

[illegible] Department of the [illegible] and [illegible] M.A. Rishton, M.D., F.R.C.S., of the Dental Research [illegible] as follows. [illegible] M.*

[illegible]

[illegible]

The interest in the [illegible] in the vicinity of the [illegible] also in that there was [illegible] dental cyst It is [illegible] of the incomplete [illegible] death of the tooth took place shortly after eruption when a small [illegible] was inserted as a substitute for the disfiguring invagination [illegible] was probably of serumin origin

I am indebted to Professor M A Rushton M D F D S for the report and excellent sections and the Medical Director General of the Navy and Surgeon Rear Admiral R C May O B E M C Q H S for permission to publish this case

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PHÆOCHROMOCYTOMA OR ADRENAL MEDULLARY TUMOUR

BY

Surgeon Commander B S LEWIS R N

This rare adrenal tumour has made its appearance with increasing frequency in the Medical Press over the past ten years and a description of two such cases which have been observed in Naval Hospitals in the past three years would seem to be worth recording

The diagnosis of tumour of the adrenal medulla in life has also become more frequent in the past few years and though the disease is a rarity yet it is one which if accurately diagnosed at an early stage holds out great hope of successful surgical intervention and complete recovery The importance therefore of accurate diagnosis is out of all proportion to the frequency of the disease

In this tumour there is an excessive production of medullary hormones adrenalin and nor adrenalin whose effects on the human body are considerably different

The former is an emergency substance liberated into the circulation and acting generally to cause an increase in the cardiac output and vasodilation Nor adrenalin on the other hand causes overall activity of the sympathetic system localized vasoconstriction and maintains the peripheral vasomotor resistance The proportion in which these two hormones are circulating determines the symptomatology of any particular case of phæochromocytoma No other pressor agent has been demonstrated in phæochromocytoma and no other cause of hypertension is known to produce excess circulating adrenalin and nor adrenalin

Clinical features vary considerably with intermittent hypertension possibly paroxysmal in type superimposed on more stable essential hypertension sweating attacks palpitations and headaches and sometimes pallor and vasospastic episodes

It has been suggested (Swain 1952) that small tumours with high nor adrenalin content may mimic hypertension while larger tumours in which adrenalin predominates may cause hypermetabolic symptoms as well

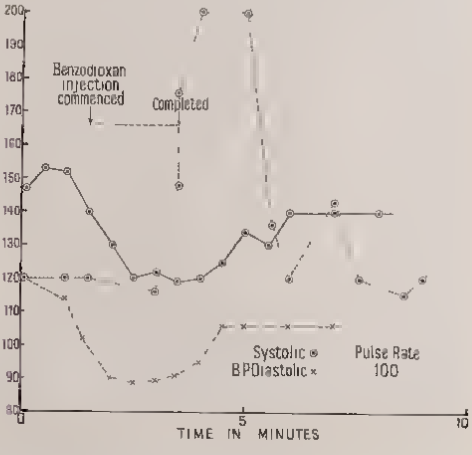
Proving or disproving the probable presence of phaeochromocytoma in any particular case and therefore the indication for laparotomy remains the province of the physician and the problem has been approached up to the present from three directions once clinical observations and study of symptoms have suggested the presence of tumour

' Firstly by assessing the quantity of circulating adrenalin and nor adrenalin (At present a very complicated procedure)

' Secondly the introduction of hypertensive attacks by the use of histamine (This is a hazardous procedure)

Thirdly, by the use of substances which block the pressor action of the Sympathetic System This procedure is comparatively free from risk and the most promising line of investigation so far

In 1947 Gohlenburgh in America described the use of F 933 (Benzodioxane) which effectively blocked the pressor action of nor adrenalin and adrenalin The intravenous infusion of this substance produced a striking though brief



fall in the blood pressure due to an excess of circulating pressor amines. It had no effect in hypertension due to other causes. There have been no fortuitously a number of proven cases where F 933 gave a false negative result and this may well have been due either to permanent changes in the cardiovascular system maintaining blood pressure even though the initiating pressor amines had been neutralized or alternatively the supply of F 933 was insufficient fully to neutralize the large quantity of nor adrenalin and adrenalin in the circulation (Gibbs and Mirhan 1953).

At present therefore the diagnosis is most likely to be made if the possibility of the tumour is considered—e.g. in a youngish subject after coarctation of the aorta and renal disease have been excluded—and an IVP or perirenal insufflation have revealed the displacements or distortions that occur in a very limited number of these cases.

Case 1. Steward aged 31 years. Twelve years service.

This patient was picked up during mass radiography. General cardiac enlargement was identified in hospital for investigation on [illegible].

[illegible] claimed the information that he had suffered from shortness of breath [illegible] the precordium, frequency of micturition and sweating at nights and cyclitis [illegible] the end of the day for the past five or six months.

[illegible] and first noticed by his wife who complained about his snoring [illegible].

[illegible] Nothing serious [illegible].

[illegible] intervals but they did not include blood pressure estimations. [illegible] severe headache.

[illegible] Thin cheerful individual. Photographs dated 1949 show [illegible].

[illegible] Antimalarial drugs. [illegible] old patches left eye. Visual [illegible].

[illegible] Apex beat [illegible] 8th left interspace 5 in. from mid line.

[illegible] 30/14 [illegible] 260/30 in thighs. Vessels palpably thickened.

[illegible] [illegible] in the left of the third head.

[illegible] and mild cyclitis, micturition and trace albumin [illegible].

[illegible] shadow very enlarged in the transverse diameter. No other [illegible].

[illegible] Urine—S.G. 1014. Albumin trace. Sugar nil.

[illegible] Specific gravities and urine phosphates nil. Urea clearance tests [illegible].

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] Suggest retrograde pyelography.

[illegible] Right kidney—swelling of upper segment [illegible].

[illegible] Suggest pathological [illegible] such as presence of a tumour [illegible] and some other [illegible] and strong, this [illegible] the patient [illegible] with [illegible] inserted with a slight [illegible].

[illegible]

[illegible] of the rather doubtful existence of [illegible] tests for phenolsulphonphthalein [illegible].

[illegible] negative was found

[illegible] Bromide [illegible] of 500 [illegible] effect [illegible] of these [illegible] of the [illegible] after [illegible]

[illegible]

[illegible]

[illegible] Two [illegible]

[illegible]

[illegible]

Case II [illegible]

This patient [illegible] 20.6.53 [illegible]

Past History [illegible] frequent [illegible]

The clinical [illegible] this diagnosis [illegible]

On [illegible]

General physical [illegible]

(1) Appearance [illegible]
(2) Blood pressure [illegible]
(3) Arteriosclerosis [illegible] side
(4) Cardiac [illegible]
(5) Palpable [illegible]

Investigations.—*Chest* [illegible]

[illegible]

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
Haemoglobin (100 = [illegible])	11.39 g	[illegible]	[illegible]
Colour index	0.98	[illegible]	[illegible]

[illegible]

S.G.	1010
Reaction	Acid to litmus
Albumin	No trace
Sugar	Nil

Microscopic [illegible] only seen in the [illegible]

Marlow [illegible] negative

Glycosuria [illegible]

Year of Grace [illegible] After [illegible] [illegible] this [illegible]

[illegible]

[illegible] headache [illegible] 1410 [illegible]

[illegible]

[illegible] through the [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] 140 [illegible] grain

[illegible]

[illegible] 185 [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

In [illegible] multiple [illegible] and proved fatal. In the first case it [illegible] change [illegible] in the [illegible] tumour [illegible] the second [illegible] diagnosis [illegible] the patient's general condition and particularly [illegible] cardiac conditions [illegible] might have shown a different result. According to the [illegible] than about 50 per cent [illegible] these tumours are multiple [illegible] at the comparatively late stage [illegible] they show highly malignant [illegible]

My thanks are due to Surgeon Rear-Admiral Massey [illegible] permission to publish these case histories.

REFERENCES

[illegible] H. [illegible] and Ma[illegible] N. (1956) [illegible] **38** 5 10 1
[illegible] H. J. C. 1952 [illegible] **1** 114

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Reviews

[illegible] By [illegible] M.D. [illegible] Pp. [illegible] 448 London Baillière Tindall and Cox. Price [illegible]

[illegible]

ATOMIC M[illegible] By Charles F Behrens M D [illegible] 1953 [illegible] 45[illegible] London Baillière Tindall [illegible] Price 84s 6d

This is the [illegible] of Behrens Atomic Medicine [illegible] has been published within four years [illegible] keep up with the prodigious [illegible] and sustained [illegible] in the field of Atomic Medicine To do this the panel of [illegible] has had to enlarge the [illegible] pages The enlargement of [illegible] those chapters [illegible] progress in fundamental research [illegible] isotopes in [illegible] and the instruments employed [illegible] radiations have [illegible] through during the last [illegible] years Notable the addition of the [illegible] the material interest in Atomic Medicine The chapters on [illegible] Blood in Anemia and Radiation Pathology [illegible] the same as in [illegible] from the panel of [illegible] has altered the [illegible] Some nine years after the first atomic [illegible] still unknown [illegible] atomic bomb explosions although some [illegible] have taken place

Behrens Atomic Medicine second edition is a valuable book and should be added to all libraries [illegible] and scientific workers concerned and refer to the wealth of information in [illegible] Radiation Research The Bibliography at the end of each chapter [illegible] references to the most important papers published up to the time of [illegible] to pursue further reading

The publisher [illegible] be congratulated on the style format and printing of this book

TISSUE TRANSPLANTATION OF NORMAL TISSUES (Ciba Foundation) Edited by G E W Wolstenholme D B E M A M B Ch B Pp xii + 238 and 20 illustrations London J & A Churchill Ltd Price 25s 6d

The Ciba Foundation has put this account of its arrangements of normal symposia to which leading research workers from different countries and different disciplines are invited Hence in this book we have not only but our assumption the deliberation of the experiments of these rooms subject We are indeed grateful to the Foundation for publishing the papers and discussions which followed

The importance of the preservation of blood and its derivatives is well known and has greatly influenced the transfusion methods It is not so well known that great progress is being made in the preservation of other tissues notably embryonic organs skin and blood vessels and their subsequent transplantation on living animals and man At this symposium the question of general tissue immunity was first discussed secondly the physical and biological problems of low temperatures and their effects on living cells and thirdly the detailed application of these procedures to specific tissues Tissue bank presents a complex social support for both destroyed and depressed tissues as in radiation injury [illegible] the Atomic Energy Commission Tissues in peace and war The story of the Tissue Bank at Bethesda U S A is fascinating and of great consequence to the nation

The style and format resemble the previous Ciba Symposia books adequate references are given to other writers papers and the publishers are to be congratulated accordingly

INTESTINAL DISORDERS IN CHILDHOOD AND ADOLESCENCE By H S Le Marquand M D F R C P Senior Physician Reading United Hospitals and F H W Tozer M D M R C P Clinical Assistant Royal Berkshire Hospital and W J Lindall M D Medical Registrar Royal Berkshire Hospital Second Edition 1954 Pp xiii 332 and 90 illustrations London English Universities Press Ltd Price 32s 6d

The second edition of this book commences with an excellent and up to date survey of the physiology of the endocrine system This is one in 57 pages and caters well for the general physician or practitioner who is unable to spare the time to try to assimilate the output of papers on this subject

The [illegible] the [illegible] experience of twenty years work in [illegible]. The [illegible] generally [illegible] all [illegible] of the [illegible] of his own [illegible] of value in learning to distinguish [illegible].

The [illegible] well [illegible] are written [illegible] the text [illegible] [illegible] 1111

The chapter [illegible] is especially interesting. There is [illegible] habits [illegible] mortem [illegible]

The [illegible] the [illegible]

There [illegible] reference [illegible]

[illegible] the [illegible]

In [illegible] find so little [illegible] about this [illegible] the index.

The [illegible] in the control of the [illegible] of hypoparathyroidism [illegible] elsewhere for the [illegible] details of the [illegible] the index.

On [illegible] page 217—Gram instead of [illegible]

In conclusion [illegible] its section on physiology [illegible] [illegible] sections the student [illegible] [illegible] logy.

HOSPITAL AT WORK. By Middlesex Hospital. 1954. Pp. 48. London: Max Parrish & Co. Ltd. Price 3s. 6d.

This is a pictorial account of the [illegible] activities of a [illegible] hospital, the Middlesex. The book is well produced and gives the patient a good idea of the enormous organization [illegible] treatment and [illegible].

PSYCHOLOGY FOR THE NURSE AND THE [illegible]. By Doris M. Odlum, M.A.Oxon., B.A.[illegible], M.R.C.S., L.R.C.P., D.P.M., Dip. [illegible]. Second Edition. 1954. Pp. 168. London: Nursing Mirror Ltd. Price 12s. 6d.

This book successfully fulfils the requirements of the General Nursing Council syllabus in the subject of psychology. The [illegible] author [illegible] clear and simple language.

It is difficult to pick out any individual chapters, but perhaps those on [illegible] and the development of [illegible] most to the [illegible]. This latter chapter [illegible] the new syllabus.

It [illegible] clearly and [illegible] student [illegible] nurse—patient relationship [illegible]. It [illegible] to the nursing profession.

FRENCH'S INDEX OF DIFFERENTIAL DIAGNOSIS. [illegible] Arthur H. Douthwaite, M.D., F.R.C.P., Senior Physician, Guy's Hospital; [illegible] All Saints Hospital for Genito-Urinary Diseases. [illegible] 1954. Pp. 1058. Illustrations 731 (289 in colour). Bristol: John Wright & Sons Ltd. [illegible]

After the last edition in 1945 Dr. Herbert French [illegible] and this edition appears under the distinguished editorship of Dr. Arthur H. Douthwaite of Guy's Hospital. Dr. French died in 1951 [illegible]

For [illegible]

With the [illegible]

[illegible]

[illegible]

[illegible]

We acknowledge with thanks receipt of the following publications

Annals of Tropical Medicine and Parasitology; *Australian Journal of Experimental Biology and Medical Science*; *British Journal of Surgery*; *British Medical Bulletin*; *British Medical Journal*; *Bulletin International des Services de Santé*; *Bulletin of the World Health Organization*; *Chronicle of the World Health Organization*; [illegible] *Hospital Gazette*; *Journal of the Boston University School of Medicine*; [illegible] *Medical Association*; *Journal of the Royal Army Medical Corps*; [illegible] *Naval Scientific Service*; [illegible] *Medical Journal*; *Medical Journal of Australia*; *Medical Press*; *Middlesex Hospital Journal*; *Military Surgeon*; *Nagoya Journal of Medical Science*; [illegible] *of the Staff Meetings of the Mayo Clinic*; [illegible] *Royal Melbourne Clinical Reports*; *St. Mary's Hospital Gazette*; [illegible] *Bulletin*; *United States Armed Forces Medical Journal*; *United States Naval Medical Bulletin*; [illegible] *Medical Gazette*; [illegible] *Medical Bulletin*.

BOOKS RECEIVED

[illegible] Headquarters United States Marine Corps. [illegible] Operational Narratives of the Marine Corps in World War II.

[illegible] Headquarters United States Marine Corps. [illegible] Operational Narratives of the Marine Corps in World War II.

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ROYAL NAVAL MEDICAL SCHOOL

(1) The Commander-in-Chief, Portsmouth, visited the school on [illegible] and [illegible]

(2) *Symposium on Dentistry for the Three Services*

A symposium on dentistry was held by the Royal Naval Dental Service from the 8th–12th March and was attended by the Director of the Dental Branches of the Royal Navy, Army and Royal Air Force, eminent members of the medical and dental professions and a representative selection of officers of the three Services and the Royal Naval Volunteer Reserve. Among the guests who attended were Captain Cecil L. Parke of the U.S. Navy and the Chairman and Secretary of the Portsmouth and district section of the British Dental Association.

The opening address was by the Medical Director-General of the Navy, Surgeon Vice-Admiral Sir Alexander Ingleby Mackenzie, *K.B.E., C.B., C.M.G.*, who expressed his pleasure at welcoming the visitors to this the first inter-Services symposium on dentistry.

The programme was as follows:

Date	*Time*	*Title of Lecture*	*Name of Lecturer*
8th March	10.30	Periodontal Disease	Sir Wilfred Fish, *C.B.E.*, M.D., F.R.C.S., L.D.S., R.C.S.
	10.45		Squadron-Leader C. W. Cloutman, L.D.S., R.C.S.
	11.30		Mr. R. H. Inglis, L.D.S., R.C.S. (Eng.)
	11.45	Apical Resins	Mr. J. Malcolm, L.D.S., R.C.S.
	12.15		Col. A. L. Burman, L.D.S., R.C.S.
	1.00		Surg. Capt. (D.E.) J. Thomson, L.D.S.
		Demonstration	Mr. J. A. McCallum, Demonstrator, Dental Technician, R.N., Barrack Portsmouth
10th March	9.15	Maxillofacial Injuries	Mr. N. J. Rowe, L.D.S., R.C.S. (Eng.), M.R.C.S., L.R.C.P.
	10.15	The Care of the Mouth (American Dental Association)	
	11.15	Impacted Wisdom Teeth	Surg. Cdr. (D) W. H. Hodge, *O.B.E.*, L.D.S.
	11.45	Physiology of Teeth	Surg. Cdr. (D) J. B. Inglis, L.D.S.
	12.15	Medico-Legal	Surg. Cdr. J. L. S. Collier, *D.S.O.*, M.R.C.S., L.R.C.P., Barrister-at-Law
11th March	10.15	Prosthetics	Mr. R. Hamilton, L.D.S., R.C.S.
	10.45		Mr. R. T. Smith, D.S., R.D.P.S., H.D.D.
	11.15		Surg. Capt. (D.E.) R. Linghouse, L.D.S.
	11.45	Administration of the three Dental Services	Royal Navy: Surg. Cdr. (D) Mountain, *O.B.E.*, L.D.S., R.C.S. Army: Col. H. J. Mill, *O.B.E.*, L.D.S. Royal Air Force: Wing Cdr. H. M. C. Williams, L.D.S., R.C.S.

19th March 0915	Film Nitrous Oxide Oxygen Anæsthesia in Dental Surgery	
1010	General Anæsthesia	Dr V Collinson F I A R C S
1115	Local Anæsthesia	Surg Lt Cdr (D) F B Cliff F D S R C S
1415	Dental Services in the Far East (Korea Campaign)	Surg Capt (D) F B Osborne F D S QHDS
1530	Closing Address	Surgeon Rear Admiral (D) F R T Williams *C B E* B D S F D S R C S Eng and Edin

(3) The 20th Senior Officers Technical Course visited the school and physiological laboratory on the 25th March

(4) The Director of Dental Studies Surgeon Captain (D) C J Finnigan accompanied by Mr F A McCallum Demonstrator Dental Technician attended the Annual Meeting of the British Dental Association at Blackpool in May 1954 The Royal Naval Dental Service Exhibit showed as a main theme a series of anatomical and surgical models in hard and soft acrylic illustrating the technique and various stages of the more difficult dental operations

A very fine model of the face and mouth constructed in the Dental Department R N Barracks Devonport depicting the use of retractors in the impacted lower wisdom tooth operation received the fullest admiration

The centre piece of the exhibit was a fluorescent screen showing colour transparencies of Dental Operations The colour photography which was carried out at the R N Physiological Laboratory Alverstoke was of outstandingly high standard

The background of the exhibit showed photographs of R N Dental Surgeries ashore and afloat R N Dental Laboratories and R N Dental Equipment

(5) Twenty nine R N V R Medical Officers attended a Refresher Course during the week 14th 19th June Lectures and demonstrations included the following

R N Medical School

Recent advances in Radiological Biological and Chemical Warfare

Dental emergencies for medical officers

Anæsthetics at sea

Occupational Health in the Royal Navy and Admiralty establishments

Medical Research

R N Physiological Laboratory and H M S Dolphin
Underwater blast—physical physiological and pathological aspects
Decompression sickness
Nitrogen narcosis
Oxygen poisoning
Medical problems associated with the training of charioteers
Submarine escape

R N Barracks Portsmouth
Medical organization and documentation
Pulheems and drafting
Officers and ratings receiving room routine
Venereal disease
Ophthalmic and X ray department routine

Air Medical School H M S Siskin
Principles of Survival—clothing life jackets water solar still etc
Oxygen
Ejection seat—lecture and demonstration
Demonstration in the Solent of Life Rafts Immersion and Exposure suits
Helicopter rescue technique

H M S Hornet
Sea trip in P T B s

(6) Courses in the Medical Aspects of Radiological Warfare for medical and nursing officers continue

News of the Service

OBITUARY

Surgeon Captain R R HORLEY R N (Rtd) died on the 29th April 1954 Born on the 11th January 1874 he qualified in 1900 and entered the R N Medical Service as a Surgeon on the 16th February 1900 He was promoted to Staff Surgeon in 1908 Surgeon Commander in 1914 and was placed on the Retired List (ngo) in January 1924 with the rank of Surgeon Captain

During the First World War Surgeon Captain Horley served in H M Ships *Perch Royal Arthur* and *Duke of Edinburgh*

Surgeon Commander J W W STANTON R N (Rtd) died on the 1st June 1954 Born on the 16th December 1869 he qualified in 1892 and entered the R N Medical Service as a Surgeon in the 14th November 1893 He was promoted to Staff Surgeon in 1901 Surgeon Commander in 1909 and was placed on the Retired List Medically Unfit) in November 1914

In March 1917 Surgeon Commander Stanton was awarded the Albert Blue Medal for the Journal of Suffolk

Surgeon Commander [illegible] DAVIDSON, R.N. (Ret.), [illegible] on the [illegible] M.V. [illegible] published in 1900 and [illegible] Surgeon [illegible] 1933. He [illegible] transferred in 1917 [illegible] (age) in Mar. [illegible] Surgeon Captain.

During World War I [illegible] Captain Dr. [illegible] R.N. [illegible] and H.M.S. [illegible] *Warwick* and *Dragon*. He was [illegible] Examining Medical [illegible] Nottingham in October 1919 when he [illegible] 1933.

HONOURS AND AWARDS

A Commander of the Royal Victorian Order

Surgeon Commander (Ret.) D. Stark Perkins, R.N.

Member of the Royal Victorian Order

Surgeon Lieutenant-Commander A. P. M. Nicol, R.N.

Companion of the Order of the British Empire

Surgeon Captain D. R. M. Hutchinson, R.N.

Officer of the Order of the British Empire

Surgeon Commander (Ret.) C. L. Ives, V.R.D., R.N.V.R.

Member of the Order of the British Empire

[illegible] Lieutenant-Commander S. G. L. Lautman, R.N.

HIGHER DEGREES

[illegible] Surgeon Commander J. M. Hubbard, M.B., B.Ch., M.R.C.P., R.N.

Coll. Phys. Medal

H. [illegible] Medal for the year 1954 has been awarded to Surgeon Commander F. L. S. [illegible], D.S.C., M.R.C.S., L.R.C.P., R.N. Bantry [illegible]

PROMOTIONS

[illegible] Surgeon Captain W. J. M. Sutter, C.N. Depot.

[illegible] Surgeon Commander J. K. Stanton, [illegible] V. Tripp, [illegible] C. Wright, [illegible] S. Ellis, A. W. W. Robertson, [illegible] L. Tritts, W. A. Burnett.

[illegible] Surgeon Commander (D)—[illegible] J. Hunter.

[illegible] Surgeon Lieutenant-Commander—D. [illegible] Hughes, D. H. [illegible].

[illegible] Surgeon Lieutenant-Commander (D)—M. [illegible] Lister.

TRANSFERS TO PERMANENT LIST

Surgeon Lieutenant (D) V. V. Davies, J. K. C. Little, J. F. Sanders.

RE-ENTRY TO PERMANENT LIST

Surgeon Lieutenant R. H. N. Lobb, (seniority 4.6.49).

RE-ENTRY SHORT SERVICE COMMISSION

[illegible] Lieutenant-Commander (D) H. S. Gun, (seniority 31.12.48).

ENTRIES FOR SHORT SERVICE COMMISSION

[illegible] Lieut. M.B., B.Ch., W. A. N. Mackie, D.S.C., M.B., Ch.B., G. R. Jones, [illegible] Taylor, D.S.

RETIREMENTS

[illegible] J. J. Crisick, R. R. Baker, G. K. [illegible], H. L. S. [illegible]

ROYAL NAVAL VOLUNTEER RESERVE

PROMOTIONS

[illegible] R. S. Rudland

[illegible] W. M. S. [illegible], A. M. McCalf

WARDMASTER OFFICERS

PROMOTIONS

[illegible] Wardmaster, J. G. Lewis, A. J. Masters, F. F. M. [illegible]

[illegible] Wardmaster—W. H. Johnson, F. G. Minkness

RETIREMENTS

[illegible] Wardmasters R. J. M. Pryce, W. L. Saunders, J. A. Kirl [illegible] Wardmaster (Rtd.) J. B. Parker

QUEEN ALEXANDRA'S ROYAL NAVAL NURSING SERVICE

HONOURS AND AWARDS

Associate of the Royal Red Cross

Miss M. Potter, Superintending Sister, Q.A.R.N.N.S.

Mrs B. O'Neill, Senior Nursing Sister, Q.A.R.N.N.S.

PROMOTIONS

To Principal Matron—Miss H. Menie, A.R.R.C.

To Superintending Sister—Miss M. Mann

RETIREMENTS

Principal Matron—Miss L. D. Bishop, R.R.C.; Superintending Sister (Acting Matron)—Miss M. Kennedy

ADMIRALTY FLEET ORDERS

(This page is perforated for filing.)

915 —Medical, Dental and Hospital Consultants

989 —Pay and Allowances—Medical and Dental Officers—Full Pay and Allowances—Revised Rates

1059 —Medical—United States Personnel Admitted to R N Medical Establishments—Hospitalization, Treatment and Disposal

1066 —Surgeons and Agents

1118 —Medical-Eyesight Civilian Type Spectacles—Settlement of Contractors' Accounts

1169 —Films and Film Strips Educational—Titles—'Atoms at Work' (Serial No D 579)—Distribution

1177 —Medical Dental and Hospital Consultants

1178 —Medical Treatment of Officers and Ratings when Sick on Shore, on Leave or on Detached Duty Use of Form S 26 Amended to Apply to Officers and Ratings

1208 —Medical Stores Proprietary Medicines—Amendment

1230 —Medical—Examinations—Indian Naval Personnel—Annual Examination and Disposal of Documents

1331 —Prizes—(a) The Gilbert Blane Medal for Medical Officers R N —1954—Award—(b) The Gilbert Blane Medal for Medical Officers R N—1955—Reports

1361 —Victualling Stores Medical and Dental Services Supply and Accounting Arrangements

1452 —Medical—Eyesight—Spectacles—Supply, Repair and Replacements—Revised Charges

1453 —Medical Vaccination —Extension of the Meaning of the Term

1512 —Establishments—R N— Medical Records Depot Drayton Parslow—Removal

1524 —Surgeons and Agents

1550 —Medical Stores—Loss, Damage and Breakage—Use of Form S-126

1740 —Dental Victualling and Naval Stores—Accounting—Arrangements in Ships with Visiting Dental Officers—

Notice

The Editor invites medical officers to send in original papers on professional subjects travel personal experiences &c. Items of news and matters of interest to the naval medical service will be welcomed from ships and establishments on home and foreign stations Notices of births marriages and deaths are inserted free of charge to subscribers

All articles or communications published in the Journal of the Royal Naval Medical Service will become the property of the Journal with full copyright powers unless the author declares when sending the article that he desires to reserve the copyright to himself All articles should be sent in duplicate.

The Harvard system should be employed for bibliographical references these references being arranged in alphabetical order of the authors names at the end of the contribution thus Smith F G (1938) *J roy nav med Serv* 22 53 In the text a reference to a publication should be cited by giving the author and in brackets the date thus Smith (1938) believed this to be due &c.'

All communications should reach the Editor on or before the first of the month preceding the date of issue Unless clearly written they should be typed in order to avoid mistakes and they should be addressed to the Editor Journal of the Royal Naval Medical Service Monckton House Alverstoke Gosport Hants.

The Journal is published quarterly four numbers comprising one volume

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The payment of subscriptions by banker's order is recommended as it relieves the subscriber of the necessity of forwarding a cheque each year and simplifies the keeping of accounts

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Articles

SOFT VINYL RESIN FOR RECORD AND INSTRUCTIONAL PURPOSES[1]

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INTRODUCTION

The technique for the construction of hard acrylic resin models for teaching and record purposes is well known The use of soft vinyl resin however which makes the task is not general and the purpose of this article is to present a technique for reproduction models in soft vinyl resin (CORVIC S U)

By the use of this medium dental operations can be shown step by step incisions and reflections of the mucous membrane removal of bone and impacted teeth enucleation of cysts fractures etc etc can be demonstrated and useful case histories can be recorded The hard and soft structures can be coloured to simulate natural tissues and bruising oedema etc can be shown

THE MATERIAL

CORVIC is the I C I trade name for thermoplastic vinyl chloride polymers and several grades are available mostly for commercial purposes CORVIC (S U) the material in use was developed for making surgical prostheses and is generally used because it has been tested and contains less than 5 parts per million of heavy metals expressed as lead

Polyvinyl chloride is manufactured by polymerising vinyl chloride which is itself a product of the reaction between acetylene and hydrogen chloride The resultant polymer is a white granular powder which possesses neither taste nor smell

When the Polymer (p v c) is mixed with a suitable plasticiser such as dibutyl phthalate the grains of the powder are swelled or partially dissolved and a creamy liquid is produced The consistency of this cream varies

[1]Lecture and Demonstration given at the Symposium on Dentistry Royal Naval Medical School Alverstoke 9th March 1954

[illegible] upon the way in which the plasticiser is incorporated with the [illegible] For industrial purposes the cream is made by a [illegible] In dentistry [illegible] prostheses or for models it is more convenient to make a mixture [illegible] and excellent results are obtained by mixing plasticiser and powder by the same method used for denture acrylics

Dibutyl phthalate the plasticiser is an organic ester chemically and a high boiling liquid physically It is an advantage to employ this plasticiser as it can be easily obtained in a high state of purity A smooth paste is required and it is necessary to mix thoroughly to ensure that no lumps of unwetted polymer remain

Calcium stearate forms a constituent of this paste because it is a heat stabilizer and change in colour of the material when heated later to process it is relied by its presence Light ivory is a very misleading description [illegible] there is no single colour which will produce this appearance However when the paste is made it is convenient to add a mineral pigment (s) in order to [illegible] the basic pink colour is a foundation on which special effects can be [illegible] Further colour occurs rolled for it should be in the form of drops of [illegible] of pigment and plasticiser

Ideally a metal mould is used for easy reproduction of many similar [illegible] and it is well worth preparing a metal mould for important work White plaster of Paris or Kaffir D is used as in dentistry it is tedious to [illegible] the mould but if this is not done thoroughly the strength of the result [illegible] prepared and often tearing of edges becomes a problem

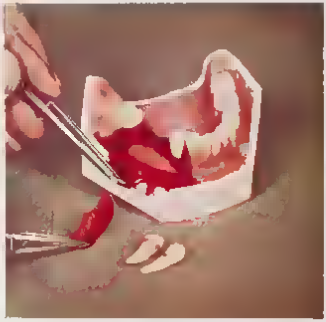
The object of processing is to fix the gel which has been produced by plasticiser and polymer No question of polymerisation is involved and although in dentistry a similar process uses polymer and monomer in this case the plasticiser is not solidified by the gelling or curing process

Preparation of the mould is always desirable and plaster coating solutions or waterglass are satisfactory on plaster moulds For dental models and prostheses the suggested time of processing is one hour at 100° C but the time varies slightly according to the bulk of the article

When the model or prosthesis is gelled and is cold it is necessary to remember that the plasticiser is a continuous tissue throughout and if a solution of a dyestuff is applied to the surface it will stain it perfectly The model can therefore be tinted by the use of a paint prepared by dissolving a suitable dyestuff in dibutyl phthalate As the stain cannot be removed it must be applied carefully The manufacturers state that the colour may fade in the light and the retouching of models and prostheses may be necessary It has been found however that the moulds have retained their original colours remarkably well over a period of three years The colours which are used for these applications are those which are soluble in waxes—namely Waxoline dyes

Technique

As much of the technique follows closely the construction of hard acrylic models the salient points in soft vinyl technique only will be described



[illegible]

Model and Mould—Models from accurate impressions are used as Kafta. D[illegible] [illegible] used. After trimming and [illegible] the model properly [illegible] from the plaster is duplicated in [illegible]

Vulcanite [illegible] at 140–150 C. [illegible] or similar [illegible] for three hours in oil or [illegible] A thermostatically [illegible] electric oven is recommended for this [illegible] as there is a flash point danger with oil baths and a liability to burn the material with incorrect oil-heat

Reproduction of teeth is carried out in the usual manner care being taken to preserve contact points and a tapered extension of the root into the [illegible]

Reproduction of Bone in Pathological Conditions—When it is necessary to reproduce bone due to pathological conditions in the jaw a wax pattern is made enclosing all or part of unerupted or impacted teeth cyst etc. and incorporating the adjacent teeth This is placed in the mould waxed in correct position and trimmed to make allowance for surrounding soft tissue The wax pattern is then withdrawn unerupted tooth or cyst removed and the wax pattern invested The bone is reproduced in a combination of the basic shades of ivory yellow and brown acrylic resin

In the reproduction of actual dental operations the natural teeth of the patient may be used for insertion into the moulds and allowance for cyst or other pathological conditions is made by hollowing out the wax pattern to the appropriate size or shape Cysts hard and soft tumours etc are reproduced in soft or hard acrylic as the case may be the texture and colour being a matter of experimentation

When Bone is required to be shown as removable the tooth or cyst is replaced in the bony cavity already prepared a wax pattern of the removable portion made withdrawn by a sprue wire invested and pressed in bone colour as before

Before assembling in the mould the teeth cyst etc should be removed and the bony cavity filled with plaster of Paris to hold the removable bone in position a precaution which will be obvious to the operator when boiling out the wax

When it is desired to reproduce a fracture of the mandible or maxilla the bone is drilled at intervals along the site of the fracture line so that it can be easily broken after incision and reflection of the mucous membrane has been carried out on the finished model

The teeth bone etc are now reassembled in the mould wax poured in and when cool the whole withdrawn trimmed and prepared for flasking

Flasking—Flasking is carried out in the normal way particular care being taken to avoid air blows It is advisable to paint on the plaster with a camel hair brush before sinking in flask The counter having been poured the flask separated and the wax boiled out both halves of the flask are thoroughly dried in a gas or electric oven over a period of two to three hours Too great a heat should not be used as the roots of the acrylic teeth may tend to soften and sag in the mould

Mixing and Colouring Corvic (S U).—Meanwhile Corvic (S U) is mixed in the ratio of 2 of powder (Polymer) to 1 of liquid (plasticizer dibutyl phthalate). A small amount of zinc oxide according to the translucency required in the finished model may be added to the liquid before mixing. To provide the basic pink colour a small quantity of cadmium red pigment enough to fill a pulp cup is mixed with a small amount of dibutyl phthalate in a Duppens glass. This is repeated in another Duppens glass with the addition of a tinge of blue pigment. These colourings are then added and mixed with the Corvic paste by pipette, drop by drop, until the desired depth of colour is achieved. It should be noted that it is preferable a model should come out a little lighter than required as it can be brought to the shade desired with the aid of Waxoline dyes.

Processing.—The Corvic mixture is poured into the mould and a minute or two allowed to elapse until it gels. The mould is then overfilled the counter put in position and the flask pressed up. The flask is clamped, placed in an electric oven and maintained at a temperature of 100° C. for one hour. Cooling and deflasking may be done immediately. The model is then trimmed where necessary with scissors and a hot knife.

The Art Base.—The next stage is to make an art base in hard acrylic to hold the Corvic model; this can be done in any desired colour. Two thick messes of ordinary toughened wax are used to form the sides and base of the mould which should give a thickness of about ¼ in. around the periphery. The wax is trimmed and smoothed, the Corvic model removed and the wax base is sunk upside down in a flask, boiled out, processed, filed and polished.

Finishing.—Before placing the Corvic model in the art base the anatomy parts of the model should be painted with a very thin solution of red or blush red Waxoline dye in dibutyl phthalate, or if the shade is correct with dibutyl phthalate only, care being taken to avoid crazing of the gingival margins of the acrylic teeth; leave to dry for a few moments, wash with warm water and soap, dry thoroughly with a clean napkin and very quickly dress the model with a blowpipe. This gives the model a life-like sheen.

Impressions of the soft tissues, reflection of mucous membrane, separation of bone, crystal, impacted teeth, etc. can now be carried out as shown in the illustrations.

The plaster of Paris in bony cavities is removed and teeth, tumours, etc. replaced. A natural (surgical or pathological) appearance can be produced by painting around the site of operations with a strong solution of red Waxoline dye.

ACKNOWLEDGMENTS

Our thanks are due to the Medical Director-General of the Navy for permission to publish this article. We should also like to acknowledge the help received from Messrs. Imperial Chemical Industries Limited (Plastics Division) and also to Mr. K. Clinch of the Royal Naval Physiological Laboratory for the colour transparencies of the models.

THE OPERATIVE TREATMENT OF INGUINAL HERNIA

A Study of One Hundred Cases

BY

Surgeon Commander C D COODE, R N

THE naval surgical specialist except at the four large Royal Naval Hospitals seldom has to undertake formidable surgical procedures By contrast he has to deal with a great number of ordinary complaints arising in working men who are members of ships companies naval establishments or dockyards It thus rapidly becomes his ambition to carry out ordinary operations well and to obtain good results from them He is soon face to face therefore with the problem of operative treatment for inguinal hernia

The incidence of this condition and the extent of the problem is not always fully realized outside the services Edwards (1943) has noted that the incidence of hernia in young adult males in the forces surprised surgeons at the outset of World War II Apart from the method of treatment there are also for consideration the criteria of successful treatment for the services and to use their young man power very strenuously

A successful result of operative treatment for inguinal hernia in a young active service rating means that he will be fit for full duty and therefore for such work as lifting heavy weights climbing over booms and ladders and boat pulling

It had already been found that the routine reporting of recurrent hernia to a central authority had produced no decisive data Too many individual factors were involved and too many variables However it was held at an annual meeting of surgical specialists that the service might still be able to produce some worth while figure on the operation treatment of hernia but only on the basis of a personal follow up of a personal series by individual surgeons

The writer s series consists of one hundred consecutive cases of inguinal hernia collected during a period of just under three years while serving as surgical specialist at the Royal Naval Hospital Portland Of these 99 were operated on personally and one by a colleague Surgeon Commander H H Fisher F R C S R N

Admissions were from local naval ships and establishments H M Dockyard Portland visiting ships at the Home Fleet retired officers and ratings living locally but to a great extent from the Home Fleet Training Squadron This unit consisted of three capital ships based at Portland and was characterized by a continuous entry at regular intervals of large batches of young National Servicemen for training and disposal Follow up had to be by post This was acknowledged to be far from ideal but was the only method readily

[illegible]

[illegible]

[illegible] their activities Rugby football and jujitsu were mentioned as [illegible] in several cases and one rating stated that he had represented his ship in the annual Field Gun Competition at Olympia on two successive occasions In particular there appeared to be no doubt whether or not the hernia had recurred In some cases supporting medical evidence was or not [illegible] given

Principles of the Follow Up

While a six months and preferably a minimum type of follow up would have been preferred it was reported by Ellis (1943) quotes Lungaere as stating that 72 per cent of all post operative recurrences of inguinal hernia occur in the first twelve months and 87 per cent of all recurrences occur in the first twelve to fourteen months The aim was therefore to follow all cases for twelve months and in fact the majority were followed for four years It was hoped to be able thus to form some general conclusions as to the worth of different operative procedures despite the small series and the short follow up period

Principles of Clinical Treatment

Every surgeon is familiar with the anatomy of the inguinal canal as taught and also with portions of the literature commenting on this anatomy or corresponding variations from it He is also familiar with the concept of the relative fixation of the internal inguinal ring and almost certainly with the work of Lattle (1944) on this subject Most surgeons might therefore agree with the conclusions of Sir Max Page namely that there are two methods of treating particularly with an inguinal hernia the method of harmony and the method of the hammer

In the method of harmony the hernial sac only is removed and is normally ligatured but if anatomical and physiological mechanism is judged it operation to [illegible] a recurrence In the method of the hammer the surgeon satisfies himself at operation either that the physiological mechanism of the region or the normal anatomy or both are broken down and therefore some kind of repair is undertaken

Types of Operation in the Series

Three main types of operation have been performed

Type I Indications Young man Good abdominal muscles Small indirect sac Normal internal ring
Procedure Removal of sac only with minimal disturbance of cord

[illegible]	[illegible]	[illegible]	Good [illegible] large internal ring
	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

[illegible] Operative Technique

All the operations were carried out under general anaesthesia, namely pentothal induction, [illegible] oxygen and ether. The operation itself was not hurried, good [illegible] display was obtained and the neck of the hernial sac [illegible] well displayed. Catgut ligatures and sutures were used in the wound.

Graduated post operative [illegible] was a routine, and the average stay in bed after operation was [illegible] days. (Cases of removal of sac only averaged ten days in bed, large repairs [illegible] nine days in bed.)

A suitable period of sick leave ([illegible]teen days) and light duty (twenty eight days) preceded return to full work.

[illegible] of Operation

The factors governing the choice of technique made at operation in each case are given below, followed by the reasons for making that choice.

Simple Operations (Types I and II)—carried out on young adults with good muscles.

In such patients the normal anatomy and therefore presumably physiology was judged at operation to be little disturbed, the internal ring was not unduly enlarged, and the prognosis was considered good. The size of the internal ring was easily ascertained by digital examination with the forefinger.

In these cases the method of herniotomy was chosen in preference to the method of the hammer, a procedure supported on reference to various standard textbooks on operative surgery. While it would be invidious to name some of these, the general principles laid down appear to be that, in *young adults*, it is generally enough merely to remove the hernial sac, disturbing the spermatic cord to the minimum. One textbook of surgery advocates this simple type of operation for *young adolescents* only, a subtle but important difference.

Operations for Repair (Type III)

Various types of operation were carried out, based on the findings at operation in individual cases. The writer was especially interested in the Bassini operation, having heard it roundly condemned in certain quarters, yet being assured in others that the late Professor Grey Turner continued to teach this method at the Post-graduate Medical School, Hammersmith.

It was accepted that in a correctly performed Bassini operation the internal oblique and transversalis muscles, and their conjoined tendon, must be opposed to the whole free length of the inguinal ligament from the pubic spine to the internal ring without tension. (In certain operations undertaken for recurrent hernia the writer found that a previous Bassini repair appeared

to have failed because the middle of the musculo tendinous arch *only* had been attached to the inguinal ligament.)

Where tension existed this was first reduced by a relieving incision in the anterior sheath of the rectus abdominis (Tanner's operation). Where the walls of the inguinal canal are defective it is generally agreed that some form of repair must be undertaken. The Bassini operation and its variants were considered to be the most efficacious and generally applicable. Aird (1949) states that in the hands of any given surgeon, it has yet to be shown that the Bassini operation gives worse results than any other operation performed by the same surgeon.

In certain cases where there was a notably large internal ring, the lowest fibres of origin of the internal oblique and transversalis muscles were detached from the inguinal ligament and reattached below the spermatic cord. The effect is to cover the internal abdominal ring, to raise the point of emergency of the spermatic cord and to reduce tension in the conjoined tendon, enabling a Bassini repair to be carried out. (Bradon's Operation.)

When the conjoined tendon and its muscles were thought to be too distant from the inguinal ligament or too frail for a Bassini repair to be carried out, the cord having been completely displaced, the posterior wall of the inguinal canal was repaired by a darn. In the early cases of the series silk was used, later fascial strips (Gallie) and finally fine nylon passed double without tension in two or three criss cross layers. A fascial patch was used once to close a big posterior wall defect, and twice full thickness skin grafts were used in similar circumstances.

Tabulation of the Series and Result

(1) *General data*

(a) Number	100 cases (99 male, 1 female)
(b) Side.	Right 57, Left 38, Bilateral 4
(c) Type	4 bilateral hernia were direct and in one there was an associated femoral hernia. Therefore 105 hernia were treated—15 direct, inguinal, 1 femoral and the remainder indirect inguinal.
	2 direct were en glissade. I was a Gill's hernia, i.e. a finger like sac extended through the posterior wall of the canal medial to the internal abdominal ring.
(d) State	94 primary
	a recurrent indirect inguinal—
	(i) Age 23. Removal of sac one year previously.
	(ii) Age 19 five years previously. Complicated by a retained intra abdominal testis.
	(iii) Age 28. Removal of sac seven months previously.
	(iv) Age 18 three years previously.
	(v) Age 45. Fascial patch three years previously.
	One bilateral direct inguinal and right femoral. The right inguinal hernia was recurrent following a Gallie repair. This appeared to have pulled the inguinal ligament away from the pubic bone causing the femoral hernia, then to have given way causing the recurrence. The left inguinal hernia was primary.

(1) [illegible] 4 [illegible]
[illegible] 1 [illegible]
1 [illegible]
[illegible]
1 [illegible]

(2) Mode of [illegible] Stra[illegible] 11
Strum[illegible] 1
Symptomless 1
Inguinal groin 1
Noticed a swelling 11

(2) *Age* [illegible]

	Under 20	40	11–45	5
	20–25	22	46–50	1
	26–30	11	51–55	1
	31–35	3	56–60	5
	36–40	6	Over 60	1

(3) *Prognosis* Judged on pre operative and operative findings [illegible] Poor 1 (direct hernia)

(4) *Muscles* Good 70 Fair 18 Poor 12

(5) *Abnormal Findings at Operation* One retained intra[illegible] in a recurrent hernia previously treated by removal of [illegible]

(6) *Post Operative Complications* Post operative cough 1 [illegible] Bronchopneumonia 1 Bilateral wound haematoma 1 [illegible] Stitch abscess 1

(7) *Follow Up* No reply 10 1 year 17 2 years 38 3 years 18 4 years 20 Total 90 mustering 95 hernia

(8) *Recurrences* Within 1 year 8

After 1 year	No recurrence	82	Not followed further 9	Recurred 6
After 2 years		63	[illegible] 30	4
After 3 years		32	14	1
After 4 years		19		

Total recurrences 19 (known) (14 within the first two years)

(9) *No recurrence after Four Years* Removal of sac only [illegible] removed internal ring closed 7 Bassini repair 6 Halsted repair 1

Comment

At first glance one is struck by the high recurrences rate following standard operative procedures and it might also appear that the three types of operation each give an almost equal chance of success after four years

Further analysis however shows that in 77 cases the simple types of operation account for 14 recurrences out of the total of 19, and in 45 cases where the simple types of operation were performed upon *young fit muscular adults under 15 years* there were 10 recurrences This is a very high rate (24 1 per cent) of failure in an age group and under conditions for which these operations are often recommended

By contrast the repair type of operation produced only five recurrences in 33 cases (approx 15 per cent) and this part of the series contained older men often less fit and often with difficult and relatively complicated hernia

Analysing the simpler types of operations still further noting the interval between operation and recurrence and relating this to age groups it would appear that in those cases where the result is about to prove unsatisfactory this will declare itself within two years

Causes of Failure

[illegible] 9) 5 21 15 3

[illegible] muscles

[illegible] 20 2 (I had a small internal ring [illegible] the

[illegible] ring—the patient was retired [illegible]

st[illegible] e was due to an error in surgical judgment [illegible]

Th[illegible] ed was unsuited to the [illegible]

Type III [illegible]

[illegible] ed with milk dam This patient had [illegible]

[illegible] Th repair appeared quite s[illegible]

[illegible] he ever estimated his ability [illegible]

[illegible]

[illegible] as an enormous hernial sac and the hernia [illegible]

[illegible] inguinal and descending colon Th p[illegible]

[illegible] as attempted at the patient s request

[illegible]

[illegible] three years previously At operation [illegible]

[illegible] a Bassini repair reinforced with a silk [illegible]

[illegible] is considered fair It is thought possible that

[illegible] such there may yet have been a [illegible]

[illegible] ch predisposed to recurrence

[illegible] had previously been repaired [illegible]

[illegible] and at operation it appeared that the

[illegible] that eventually it had pulled the inguinal

[illegible] of the inguinal canal had dis-

[illegible] ical direct hernia This was [illegible]

[illegible] ated femoral hernia The repair was

[illegible] estimate the posterior wall of the canal

[illegible] ed by replosing the [illegible]

[illegible] left side there was a direct hernia

[illegible] This will as [illegible] ted

[illegible] ith there was a small hiatal

[illegible]

[illegible] hernia which could no longer

[illegible] on the left side At operation

[illegible] and the repairs appeared to be

[illegible] ing the rings but were large

[illegible] h set The patient then voluntarily

[illegible] ter dental extractions and the

[illegible] important and difficult

[illegible] suited that the blending

[illegible] ed the repair

Comparison of Prognosis

Comparison of prognosis judged at operation with eventual results

8 recurrences of Type I all judged at operation to have a good prognosis
6 Type II 5 had good and one fair prognosis
5 Type III 1 had good 2 fair and 2 poor prognosis

Discussion

The problem of the operative cure of inguinal hernia is at present by no [illegible] solved The examination of results and recurrence rates is a lengthy,

laborious depressing but salutary task. However it provides a stimulus and challenge to the individual surgeon.

In the writer's series the simplest type of operation, namely removal of the hernial sac, only, shows up very unfavourably. Though described and advocated in various standard works, though carefully applied to those cases in which it is held to be especially indicated, namely young fit muscular men with little anatomical derangement, it shows a high recurrence rate. Moreover recurrences tend to occur early, and they occur when the patient has undertaken no more than normal duties. Perhaps the most startling finding is that those cases which recurred had all been judged at operation to have a good prognosis, yet in none of them could any obvious cause or extenuating circumstance for the recurrence be shown. The conclusion is that this type of operation is unsound and the end results do not accord with the prognosis as judged at operation.

The second type of operation, namely removal of the sac and closure of the internal ring, also shows up unfavourably. Again there is a high recurrence rate with a likelihood of early recurrence after no more than normal duties. In this group also the prognosis at operation had generally been considered good, but the results belied this judgment. The conclusion is that where the internal abdominal ring is already enlarged, merely closing it with a mattress suture or sutures (after removal of the sac) is not enough to prevent a recurrence. This type of operation is unsound, and the end results do not accord with the prognosis at operation. This conclusion is at variance with some current teaching given in various standard textbooks.

The third type of operation shows up relatively favourably, and in each case of recurrence some apparent reason for it could be shown. Moreover the recurrence generally could be related to the prognosis as judged at operation. The repair operation of Bassini and its variants is applicable over a wide range. It gives reasonably reliable results for moderate and large hernias in adults, and is considered a satisfactory operation in the treatment of inguinal hernia.

Summary and Conclusion

One hundred consecutive cases of inguinal hernia are analysed. Three types of operation have been used: Types I and II— the method of harmony—the simple operation without repair; Type III— the method of the hammer—the repair operation.

Recurrences in Types I and II lead to the conclusion that this operation should be abandoned in patients aged 18 years and above. Type III, the repair operation, is generally applicable, gives better results and the end result can be forecast with some accuracy at operation. This type of operation is recommended as the method of choice for all Service personnel.

My thanks are due to the Medical Director-General of the Navy, Surgeon Vice-Admiral Sir Alexander Ingleby Mackenzie, *K.B.E.*, for permission to publish this article, also to my erstwhile colleagues on the medical and nursing

staff of the Royal Naval Hospital Portland [illegible] in the treatment of the cases in the series

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MEDICINE IN THE FISHERY PROTECTION SERVICE

BY

Surgeon Lieutenant A J BOWDLER, R.N.V.R

The Background

The Fishery Protection vessels operate in the areas off northwest Europe where British fishermen are chiefly to be found These areas vary according to the season usually in the regions of Iceland Norway and the White Sea The many duties of the Service include the prevention of fishing in areas internationally agreed the provision of meteorological reports and lastly that of providing an element of medical attention It soon becomes apparent that the last is the most welcome from the fisherman's outlook and it is as a result of meeting both skippers and hands at sea that this report is written

It is customary to spend a short period in harbour near the chosen fishing ground for the patrol (for instance at Reykjavik when in the vicinity of Iceland) where information on the disposition of the fishing fleets may be obtained from the local British Consulate or from fishermen forced to put in by weather shortage of fuel sickness or matters litigious Contacts are usually made first by radio but owing to limitations in the range of wireless reception news of vessels needing help may arrive at second hand Depending on such reports and on the alleged distribution of trawlers near by sea patrols of four or five days duration are maintained followed by a short period ashore when the situation can be reassessed

The ships employed for this work are H M ocean minesweepers carrying a medical officer with a well supplemented scale of supplies A meteorological officer and his special equipment may also be borne The policy adopted with regard to permissible fishing areas is largely the subject of international agreement, but there frequently seems to be dispute in both the letter and the spirit of the law which leads to a regrettable lack of co operation at the practical level

The deep sea fisherman's existence is extremely arduous and not infrequently dangerous a situation not alleviated by the current organization of the industry The mainspring of the industry is competition between ports between firms and even between skippers engaged by the same firm In addition the maintenance of a trawler at sea is a considerable expense and there is the individual obligation to waste no time in hoarding the catch and

returning home. Hence three weeks or more may be spent at sea often near mine too friendly shores with little contact with land.

Problems Involved

The position of a skipper having a sick or injured man aboard is unenviable. In the absence of expert assistance he must decide whether the condition of the patient demands a return to land, whereby he loses many valuable hours fishing and adds to the company's expenses or risk keeping the patient on board. He must bear in mind that failure to land his patient when really necessary may endanger the patient's health, cause loss of confidence amongst the crew or may involve him in costly defensive litigation. It is a situation to which no layman should properly be subjected.

The fishery protection service provides the medical and ambulance facilities of a minesweeper subject to the limitations dictated by the shortage of space available aboard. The first assistance is usually by radio and no attempt is made to diagnose advise and prescribe from the small range of drugs carried in a trawler's medical chest. When possible follow up reports are later obtained but frequently there is a once for all encounter. Secondly when the case is in doubt or appears to require personal attention an attempt is made to rendezvous. Should the case be of some magnitude it is customary to arrange a transfer to a civilian hospital whence the seaman is later flown home to the U.K. It is not usually possible to perform more than minor surgery or the first stages of medical care treatment is essentially interim.

A fairly wide spectrum of cases is met with and there appears to be a seasonal variation. Accidental trauma is occasioned more often in bad weather and is partly conditioned by the age and experience of the crew and by the necessity for long hours of work on deck. Schilling (1961) briefly quotes some interesting parallels in factory workers.

The fisherman is frequently beyond or into middle age and in unfavourable conditions one not infrequently meets the effects of degenerative lesions which are more easily borne in equable weather. One interesting personal case was an elderly hand with whose competence the skipper seemed well satisfied who presented with combined osteoarthritis a well compensated Erb's palsy arteriosclerosis and the sequelæ of a treated giant cell tumour of the tibia.

Another Outlook

When in Reykjavik in April this year it was our privilege by the kindness of her captain and officers to see a corresponding vessel of the Federal German Republic the Fischereischutzboote *Meerkatze*. The attitude here was rather different and as far as possible in matters medical as well as in others the attempt was made to render the fishing fleet as independent as possible of the local country.

By comparison with the minesweeper's sickbay the facilities of the *Meerkatze* were vast and would have been adequate for a small cottage hospital. Firstly there were over thirty cots available excluding two separately situated

as an [illegible] The [illegible] ward measured the full be[illegible] and, should [illegible] would be possible to provide [illegible] number of birth[illegible] well provided for isolation [illegible]

An operating [illegible] well equipped with instruments [illegible] anesthetics, also contained an X ray apparatus rather like the Portex A separate consulting room contained a well arranged dispensing cupboard a bacteriological cupboard dental equipment for the conservative treatment of caries and an infra red lamp The range of drugs carried was excellent and included crystalline and depot penicillin as well as more recent antibiotics antihistamines, various analeptics antigens and local anesthetics In microcosm it was an excellent indication of the recovery made by German medicine since World War II despite the depredations political and ethical of the preceding years

The staff consisted of a medical officer [illegible] sickbayman and a part time stainman orderly for routine non medical work Despite the fact that there were many fewer German trawlers in the area than there were British the German doctor claimed to have seen nearly three times as many cases in the previous month as we had Allowing both for Teutonic pride and enthusiasm and the fact that the German trawler stays at sea in weather in which it is usual for our own to seek shelter it undoubtedly reflects the confidence and reliance placed in the doctor and his facilities The attempt here is generally at definitive treatment and the situation of the stranger being nursed in a strange land often unsatisfactory however technically adequate the attention is very nearly eliminated

Conclusions

There are certain ways in which the medical service to the fishermen might be improved Firstly it would be invaluable to the medical officer giving advice by radio if he could be certain of some few standard drugs being available on board each trawler The carriage of a sealed package containing say penicillin an antihistamine a sulphonamide and a reliable sedative only to be opened by the skipper on the express instruction of a medical officer would provide some adequate basis for temporary measures Secondly in the long term view the provision of specially designed and equipped ships for fishery protection patrolling seems essential The present economic difficulties may make this wishful thinking but the industry is prosperous and might well share the public cost of extending the comprehensive civilian health services to those who spend so much of their existence outside their orbit That this is possible is borne out by the German experience and that it would be welcomed is evident from the reception given to any visiting doctor at sea It would more than justify itself in the greater sense of personal security of the fisherman and in this being shared by their families Possible secondary functions such as emergency use in any future conflict only add to the conviction that such ships would be more than useful as an addition to British shipping

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VENEREAL FOCI IN PORTS[1]

BY

R. R. WILLCOX

(*St. Mary's Hospital, London*)

Introduction

The ports had a special significance in venereal disease control. They were not only points of entry of the venereal diseases but even present foci smouldering and being kindled by similar foci in other ports of the world.

The special problem of the ports is well illustrated by a comparison of the figures of early syphilis in six large cities and six large ports in Great Britain in 1948 and 1949. The six ports chosen were Liverpool and Merseyside, Manchester and district, Hull, Bristol, Tyneside and Southampton, with a total population of 3,377,000 persons. The six inland towns were Birmingham, Sheffield, Leeds, Bradford, Nottingham and Leicester, with a population just exceeding three millions. In the two years there were 2,376 male cases of early syphilis in the ports as compared with only 1,010 cases in the inland towns. At the same time there were 661 female cases in the inland towns and 1,336 cases in the ports.

General Pattern

The pattern of venereal foci in ports is not an individual one but is the same as is found in large cities where there is a considerable floating population.

Whereas the permanent inhabitants marry and settle down, or achieve more or less stable sexual relations, those in transit are unable to do so and hence tend to consort with prostitutes who accept money for their services or with casual promiscuous females who oblige in exchange for a few drinks, a pair of stockings, or for nothing at all. The latter have been termed 'Amatrices'. In America during the war they were called 'Patriotutes'.

The Prostitute

The prostitute is as old as man himself. The pattern of prostitution encountered in many parts of the world is related to the state of socio-economic development. In the Far East and parts of Africa it is almost part of the social fabric. Thus in Japan the prostitutes have even formed themselves into a trade union to prevent exploitation by the house owners. In Africa the prostitute, charging 'two and six short time', needs no brothel but uses the bush or the hut of a friend. In such areas the men drift from the country to the towns seeking employment; the women follow also, often to

[1] Based on an address given to the W.H.O. Port Demonstration Centre, Rotterdam, in October, 1953.

find that there is little else but prostituting for them to do In the East, a stage forward (?) in development the girls are herded together in brothels the owner and others not the least the owner including the cleaners attendants pimps and procurers are dependent on the prostitutes for their living Such is the position in many Far Eastern and South American ports The cages of Bombay are well known In Bangkok there are no less than 4 000 brothels

As might be expected in the prostitutes of the brothels venereal diseases are rife not only syphilis and gonorrhœa but chancroid and lymphogranuloma venereum as well In countries where the expectation of life is short that of the prostitutes is shorter but it is tuberculosis not syphilis which usually kills them

Prostitution and alcoholism go hand in hand and, as many of the users of brothels are under the influence of alcohol at the time disturbances of the peace are likely The next phase in evolution therefore is the segregation of the brothels in certain streets where they can be kept under police surveillance In Ankara in 1949 the street was barricaded and the police frisked all comers for knives, guns etc

At this stage the State usually steps in to take not only control but also some of the money In the middle of the sixteenth century the profits from the public brothel at Toulouse which had been established by Royal Charter were handed over to the hospitals on the condition that they treated infected women The licensed brothels of Southwark London were famous up until the time of Henri VIII

As the brothels became licensed some sort of medical control over the women came to be exercised Such a pattern may be seen today in a number of Middle Eastern countries who have been under French influence Here the brothels are less sordid are grouped into classes to suit different social strata and nurses and in theory medical examination of the inmates takes place regularly This system was only tried once in England under the 1864 Contagious Disease Prevention Act which ordained that prostitutes resident in the garrison towns of Portsmouth Plymouth Chatham Sheerness, Aldershot Colchester Shorncliffe The Curragh Cork and Queenstown (most of which are ports) were required to attend for examination If they were found suffering from venereal disease they could be detained in hospital for a period not exceeding three months The act aroused much opposition and was suspended in 1883 to be abolished three years later It did not succeed in reducing the venereal diseases rates in the British Armed Forces

Regulation and medical examination of prostitutes has failed in the past because any girls found infected had to be admitted to hospital for long periods under conditions which were often comparable with prison Thus many would resort to subterfuge in order to obtain a clean bill of health and doctors who would give certificates for payment entered indirectly on the pay roll of prostitution The disadvantages of being registered as a prostitute are apparent and where prostitutes are regularized the bulk of prostitution becomes concealed while a small number of known prostitutes,

usually the least sharp witted receive the concentrated attention of the authorities with little effect on the venereal disease problem as a whole

The registered public women in a licensed brothel can earn but a fraction of what they can working on their own As a result in countries where such regulation exists, the estimates of the number of unofficial prostitutes is many times the number on the official register Such regulation, therefore brings little material advantage

Thus the unofficial prostitute emerges trading in the street or in bars Along a parallel line runs the dancing partner of the East who is under contract to the place which employs her but she gets her would be consort to buy her out for the evening after which she can make her own arrangements These girls are in reality prostitutes but with their more settled place of assignation they can often afford to be slightly more selective in the choice of their lovers This type of girl can be found in nearly all ports and cities At the top end of the scale they are night club hostesses

From time to time efforts are made by unscrupulous persons to group the girls together and organize prostitution as a racket Initially they persuade the girls to co operate by offering them imposing accommodation and new clothes to attract the customers Thus prostitution may come to form an aspect of gang warfare and in America has been termed the vice racket" Most European countries have this trouble to a greater or lesser degree from time to time before the ringleaders are sent to jail

Such events when they come to light are usually followed by stronger penalties being imposed on women arrested for soliciting and by a police drive against vice These do not last however and the hard core of prostitution remains Even when it is apparently stamped out it is in reality underground Thus in America today where it is estimated that prostitution is responsible for only a small fraction of non marital intercourse the frequency of intercourse with prostitutes per million total population is close on 1 659 000 per year

Various surveys of sexual behaviour have been conducted and it is apparent that sexual intercourse with the chosen consort prior to marriage is widespread Intercourse not for direct financial gain is generally allowed by many women whenever any permanent liaison is contemplated Others will allow it if no marriage is contemplated but if the friendship is likely to continue These groups are no menace from the venereal disease point of view It is the promiscuous girl the amatrice who will consort with all and sundry at short or no notice who is the greatest problem of all

The pattern which has been outlined has taken hundreds of years to evolve and opinion in different countries today is in different stages of development In the underdeveloped countries there is usually widespread prostitution in those more developed the prostitution is organized In what some may consider to be the over developed countries prostitution is no longer a significant factor in the social life the good time girl having replaced the prostitute

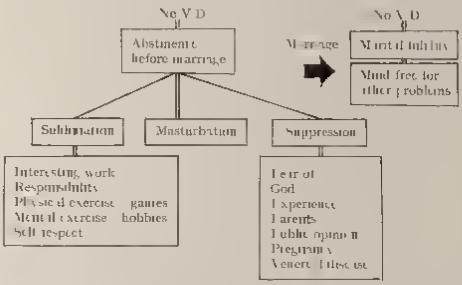
The Roots of Venereal Disease

The Rotterdam Port Demonstration Group have published an excellent report on the Social aspects of venereal diseases in seamen which brings out well the reasons why many seamen associate with prostitutes

It behoves us to consider for a moment the factors which lead to venereal diseases and note how the circumstances of the life of a seaman reduce considerably the stability of the taboos of society

The ideal of abstinence before marriage and fidelity afterwards is complicated by no problem of venereal disease The considerable mechanism which is required to achieve this is illustrated in Table I

Table I —The Code



This ideal however is rarely completely fulfilled and according to the manner by which the breakdown occurs depends on whether venereal disease is likely to result (Table II)

Table II The Code is Broken

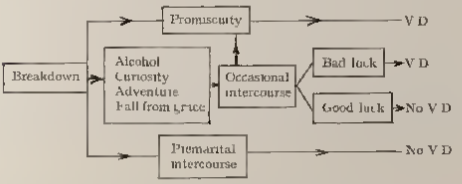
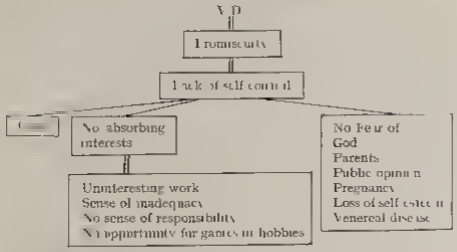


TABLE III—PROMISCUITY



In the consideration of seamen it will be appreciated how the inhibiting influences are weakened

The fear of God has been weakened by the lessened influence of the Church Fear of parents and public opinion and also fear of pregnancy will not prevent intercourse in a foreign port There is no loss of self esteem if it has been done before On the other hand self esteem in a young person might actually be increased by the imitation of the habits of his older shipmates if he has not The fear of venereal disease has been lessened by the condom and prophylactic packet and especially by modern effective and rapid treatment schedules

On the other hand in many ports where there are no opportunities for games and hobbies, the seaman experiences a sense of social inadequacy as a stranger in a foreign land Neither too may there be any foreseeable opportunity for marriage and a settled sexual life ahead The seamen therefore resort to the bars and alcohol is the key to the door of promiscuity which awaits beyond with an ever beckoning finger

Measures to Deal with Venereal Foci in Ports

There are three possibilities

(*a*) Eradication of the focus
(*b*) Keeping the sailor away from the focus
(*c*) Protecting him against the effects of exposure

Eradication of the Focus

The port venereologist should note carefully the source of the infections which he treats First to know your enemy is an excellent principle and it is right that he should acquire a knowledge of the black spots of his port

From this point the contact tracing machinery must endeavour to bring the patients voluntarily to the clinic As confidence is established the task will tend to become easier Any attempts to eradicate the focus however are

likely to lead to hunger is the focus is supplying [illegible] food. The best results are likely to come from attempts to keep the sailor away from the focus.

Keeping the Sailor Away from the Focus

If the sailor can be made comfortable and able to enjoy his leisure by indulging in billiards and other games in a club like atmosphere of a sailors' home he may be persuaded against the wasting of his money in bars and brothels. It is noteworthy that the venereal diseases rate in the British Army at home in the last century were not improved by the Contagious Diseases Act but rapidly fell when the social conditions were improved in the garrisons and the soldiers had opportunities for healthy recreation as an alternative to the wet canteen and brothel. In the words of Osler: "Certainly it is better as St. Paul said to marry than burn but if the former is not feasible there are other altars than those of Venus upon which a young man may light fires."

The civilian has other altars ready to hand but the seaman has not and they may be difficult for him to find during the relatively few days he is ashore. The finding of them is the mission of the welfare worker. It is not enough that he should play football or take part in a discussion for if he does not enjoy it he will escape along the old road as soon as he is able. He must be encouraged to do things he enjoys. He must not be allowed to be idle for idleness is the mother of lechery.

Thus the provision of good hostels for seamen is essential. In their setting it may be possible to make free communication with the more sordid parts of the town just that much more difficult. There is much scope for welfare amongst seamen, especially in making them feel at home when in port.

Schemes which ensure that the seamen's money can be safely banked will reduce what is available for wild sprees.

Protecting the Sailor Against the Effects of Exposure

The sailor is no different from the civilian and a number of civilians with all their amenities still contract venereal disease. Even if the welfare facilities are perfect there will be some sailors who are habitually promiscuous. The problem is not solved by the psychoanalysis of the group and by the verdict that they are psychologically immature. It is for these persons that prophylactic measures are particularly designed. There is always the fear that in advocating prophylaxis those who are not already promiscuous might be encouraged to become so and that the method might in the long run defeat its own ends by encouraging promiscuity. There are three methods of prophylaxis: (a) Mechanical, (b) Chemical and (c) Systemic.

Mechanical Prophylaxis

The condom offers good protection provided that it is applied in time personally by the user. Unfortunately as a result of alcohol it is frequently used improperly or not at all. The general issue of condoms to sailors is not approved in Great Britain as it is felt that they might "burn a hole" in the

pocket and encourage warriors to become promiscuous Nevertheless they are made available to those who ask for them

Chemical Prophylaxis

This is achieved by the applications of 30 per cent calomel ointment to prevent syphilis to which 15 per cent of a sulphonamide is added to prevent soft sore The British prophylactic ointment contains 30 per cent of mercurous chloride and 15 per cent of sulphathiazole in a suitable base in a tube containing 60 grammes

The user is first instructed to pass water and then to wash his penis and adjacent parts thoroughly with the small piece of cloth provided One quarter of the contents of the tube is then squeezed into the urinary meatus and the rest of the ointment is rubbed into the skin of the penis purse adjacent abdomen and thighs for three minutes after which the user is instructed not to pass water for two hours British merchant ships carry these tubes at the rate of 50 for the first 50 men and then 50 for each subsequent 100 men

It is doubtful whether it is feasible or desirable to establish prophylactic stations in the ports in sufficient quantity to be of any use and to justify their expense Prophylactic treatment is most conveniently carried out on return to the ship Unfortunately alcohol frequently prevents this from being done properly

Systemic Prophylaxis Abortive treatment

Gonorrhœa can be prevented by the means of penicillin tablets in doses of 150 000 units given orally on return to the ships They have been widely tried in the American Navy, and for this reason are popular with American sailors

Disadvantages are that in this dose syphilis and other venereal diseases are not necessarily prevented and that there may be a risk of masked syphilis and of the encouragement of future penicillin insensitive organisms and of penicillin sensitivity in the patient While it can be argued that these risks are not high it cannot be gainsaid that the method is costly As great a dose of penicillin has to be given to many times the number of persons who would have to receive it had the gonorrhœa been allowed to declare itself It has also been objected to on moral grounds

Given by injection the results of 'abortive treatment' are more sure but the same objections pertain and we are on controversial ground Systemic prophylaxis is not recommended in British ships indeed the opposite Personally I feel that chemoprophylaxis by injection has a place in the management of venereal diseases but not as a routine but under selected circumstances e g a recently exposed returning to his wife after a considerable absence or in areas of very high prevalence

The chief stumbling block in these cases is the possibility of masking an incubating syphilitic infection and therefore in the selection of the dose of penicillin to be given and the follow up to be followed It is possible that the new benzathine penicillins will give 100 per cent of successful results in

primary syphilis will [illegible] If this [illegible] will be safe to emphasize the same loss in [illegible] given prophylactic treatment during the preprimary stage and the question of follow up would be of little importance

Sufficient for the moment to say that the use of the condom and prophylactic packet in British seamen is approved for those that want them and that at present systemic prophylaxis (abortive treatment) is not It remains to be seen in the fullness of time whether these views will change

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Clinical Notes and Cases

FATAL FULMINATING CAVERNOUS SINUS THROMBOSIS

BY

Surgeon Commander H. J. BENNETT, R.N.

BILATERAL cavernous sinus thrombosis is of sufficient rarity to warrant detailed description of its clinical course when the opportunity arises.

The following is a clinical presentation watched from onset to inevitable death in less than four days in a young healthy male. No similar case has been recorded in this hospital over many years. Standard references give it scant attention except for describing the regional anatomy involved.

In view of the extreme gravity of the condition the practical difficulties of carrying out certain desirable observations not possible in this particular case the constant presence of naturally anxious parents and in refusal of a post mortem leave many gaps which may be open to criticism. Nevertheless the existing data are sufficient for diagnosis and description.

CASE HISTORY

10th June, 1954 at 1600 an officer cadet aged 18 was admitted to hospital with a two days history considered as a common cold with malaise, headache, slight fever, conjunctivitis and upper respiratory catarrh. Physical examination was otherwise essentially negative in a fit youth.

11th June, in the morning, he suddenly developed temperature 104. He became disorientated, unable to comprehend and carry out simple instructions such as being asked to put out his tongue and when offered a urinal endeavoured to use it as a drinking vessel. He was apathetic, quite uncooperative with dry mouth, constantly licking his lips, vomited and showed a thin serosanguinous nasal discharge. There was slight puffiness of both upper eyelids. The body tone was generally flaccid with marked neck rigidity.

Lumbar Puncture.—Cloudy fluid under greatly increased pressure. W.B.C. 850. Polymorphs 98 per cent. Lymphocytes 2 per cent. R.B.C. 170 per c.mm. Globulin—moderate increase. Protein 90 mg. per cent. Chlorides 730 mg. per cent. Sugar 103 mg. per cent. No organisms found and culture was sterile. Peripheral leucocyte count 21,600. Polymorphs 99 per cent. Lymphocytes 5 per cent. Monocytes 1 per cent. Eosinophiles 1 per cent.

Culture from nasal swab showed scanty haemolytic streptococci and he was considered as an early case of infective meningitis.

A few hours later he became very restless, temperature 105.6 and suddenly developed enormous oedema of the (L) periorbital region with pitting oedema of the (L) forehead and face and complete closure of eyelids. The diagnosis of cavernous sinus thrombosis was now manifest.

Lumbar Puncture.—Very cloudy fluid under increased pressure. W.B.C. 3,545.

Polymorphs [illegible] per cent [illegible] per cent R B C [illegible] increased [illegible] 150 mg [illegible] Chlorides 760 mg [illegible]
Peripheral leucocyte count 34 [illegible] Polymorphs 92 per cent [illegible]
Mental [illegible] per cent

By 20.00 he was [illegible] and unconscious [illegible]
Temperature [illegible] and respiration 34 Colour good [illegible]
harsh [illegible] at the pulmonary area [illegible]
Ears clear Nose still [illegible] sanious discharge

Lumbar Puncture —W B C 1 990 Polymorphs 89 per cent [illegible]
R B C 34 000 Albumin light pulse 130 Temperature 101 8

Deeply [illegible] with a spastic (R) arm and the (R) [illegible]
plegic posture

Lumbar Puncture —W B C 1 120 Polymorphs 97 per cent [illegible]
R B C [illegible] per cent

1.30 Jerky breathing temperature 104 deeply unconscious [illegible]
flaccid in [illegible] Noisy stertorous Further vomiting

1300 *Lumbar Puncture* W B C 660 Polymorphs 81 [illegible]
per cent R B C 1 650 per c mm Sugar 98 mg per cent [illegible]
He was given 10 c c of 10 per cent magnesium sulphate [illegible]
But upon the spread [illegible] the (R) cavernous sinus [illegible]
of the (R) [illegible] in putting [illegible] the (R) [illegible]
[illegible] per cent [illegible] of the (L) [illegible]
and [illegible] through

1700 *Lumbar Puncture* —W B C 505 Polymorphs 81 per cent R B C 1 060 per c mm Lymphocytes 19 per cent

2300 Temperature 102 Pulse 130 Poor colour Respiration [illegible]

The facial [illegible] a widespread grumous [illegible] on the [illegible] than the (R) side There was [illegible] of both arms and he was obviously deteriorating rapidly although the colour was still good

13th June the patient was deeply and flaccidly unconscious still with gross bilateral periorbital [illegible] and [illegible] A scattered haemorrhagic rash appeared on the trunk possibly [illegible] Heart—coarse pericardial friction audible at the base

Lumbar Puncture —W B C 1 [illegible] per c mm Polymorphs 84 per cent R B C 2 500 per c mm Lymphocytes 6 per cent

At 2000 Pulse 130 Respiration 34 Incontinent all day 2300 Temperature 101 Pulse 130 Respiration [illegible]

He was breathing by mouth with a fishy [illegible] circulation The heart was rapidly dilating to the left

It was just possible to see that there was still a pupillary reaction to light Lungs clear

14th June Pulse less [illegible] Respiration 30–40 Heart grossly dilated [illegible] seeping profusely

With [illegible] the pupil [illegible] absolutely a little and it was possible for the first time to see the ophthalmoscope [illegible] There was [illegible] disc and enormous thrombosis of all visible retinal veins Complete ophthalmoplegia appeared to be present

He died at 1400 that day of complete cardiac failure

Treatment

From the onset of meningitis signs he was given 100 000 units crystalline penicillin three hourly and injections of 2 grammes soluble sulphamethazine four hourly With each lumbar puncture 10,000 units intrathecal penicillin had been injected Anti coagulants were considered but not used

OBSERVATIONS

The patient never spoke again, following the onset of meningitic signs Unconsciousness was rapid, profound and unrecovered

With failing circulation the œdema receded a little He was able to swallow until almost the end, when the reflex disappeared

Early restlessness was lessened with relief of intracranial pressure by the lumbar punctures but later on this made no difference to the cerebral irritability and there was a constant sudden throwing of the head from side to side The patient adopted no particular body posture

The general course of the illness was fulminating, with early frank signs, and the eventual fatal outcome was inevitable after the spread of thrombosis to both sides

Surgical opinion was taken at the onset in the hope that some form of radical interference was possible but to no avail

The variation in C S F cytology is noticeable

W B C rose from 830 3,000 and then cleared slowly to 440 before death, with differential count variation the actual meningitis had largely cleared

The entire course of this illness presents a perfect clinical picture of the disease from the appearance of nasal sepsis with its streptococcal sero sanious discharge, the infective and thrombotic spread into the cranial cavity with the external signs of massive local œdema, and final cardiac failure

Acknowledgment is made to the Medical Officer in-Charge, Royal Naval Hospital, Plymouth, for permission to publish this case report

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TWO UNUSUAL MANIFESTATIONS OF ANXIETY

BY

Surgeon Commander G C WALLIS, R N

THIRST AND POLYURIA AS LEADING SYMPTOMS

A Signalman aged 21 was admitted to hospital on 19th March 1954 with a twenty four hours history of dizziness blurred vision feeling feverish anorexia nausea and vomiting

On admission no significant physical signs were found other than a slightly furred tongue and mild tachycardia. His original symptoms subsided with bed rest but on the 21st he complained of increased frequency of micturition (D N = 14 2) due to polydipsia his intake and output of fluids both being in the order of 5 to 8 pints daily

Urinalysis revealed no abnormality except a slightly reduced specific gravity (1008) and six specimens of urine (before and after each main meal in one day) contained no sugar The fasting blood sugar was 100 mg per 100 ml W B C and skull X ray (with special views of the sella turcica) showed no pathology

In view of the persistence of his excessive intake and output without any demonstrable physical basis he was examined from the psychiatric aspect He was rather tense and

over talkative and [illegible] history of restless sleep and he [illegible] said made him feel as though he had a gyroscope in his head.

He described an unstable and divided background an unhappy [illegible] childhood with an unsympathetic stepmother and a stormy courtship during the previous three years. He admitted that in April 1951 he attempted suicide by hanging because his fiancée threatened to return his engagement ring. In the few weeks before his admission his fiancée's letters had been becoming more infrequent and she had indicated that she was thinking of returning to her man.

He was eventually discharged in the Service because his prospects for advancement were poor and because he wanted to go to Australia where his mother was living.

The opinion was formed that his first and point were due to anxiety. With sedation and supportive psychotherapy their subsidence rapidly and he was symptomless when discharge took place on 20th April.

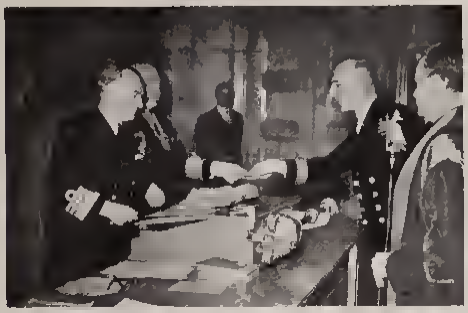
Neurosis with Hiccups

A Sergeant of the Royal Malta Artillery aged 37 [illegible] with a five year history of pains in the left [illegible] the chest left shoulder and upper [illegible] hiccuping, belching, with the sensation of being breathless, trembling sensations in the chest, lassitude and spell of trembling, giddiness. The medical officer had [illegible] with evidence of [illegible] neurosis.

He [illegible] rather garrulous. Although [illegible] he had [illegible] the left lower eyelid and his palms were [illegible] lines right hand and he demonstrated how [illegible] his habit of [illegible] hand. These nodules can be seen in the [illegible] that the only [illegible] bullen.

He [illegible] continued little of interest. It was considered that he was [illegible] who had a chronic anxiety state due to fear of organic [illegible] was [illegible] by a muscular strain in 1949. He was treated by reassurance [illegible] and persuasion. He was seen again a week later when he was virtually [illegible] relaxed. His twitch had disappeared and some of the nodules [illegible] right hand were smaller.

PRESENTATION OF THE GILBERT BLANE MEDAL 1954



THE above photograph was taken in the new Council Chamber of the restored Royal College of Surgeons on the 20th July on the occasion of the presentation of the Gilbert Blane Medal to Surgeon Commander J L S Coulter D S C M R C S L R C P (Barrister at Law) by the Medical Director General of the Navy Sir Alexander Ingleby Mackenzie K B E C B Q H P in the presence of the President Sir Cecil Wakeley Bart, K B E C B and the Council of the Royal College of Surgeons

The occasion was unique in that each of the Service Directors was present and the Mitchener Medal and Lady Cade Medal were presented to recipients from the Army and R A F for the first time and on the same lines as the Blane Medal for the Navy

This was the last occasion on which Sir Cecil Wakeley appeared in concert with the Services as he has now ceased to be President

The photograph also includes Professor Lambert Rogers another of our Consultants carrying his staff of office as Vice President of the College

Reviews

CHEMOTHERAPY OF INFECTIONS By H O J Collier B.A. Ph D M R Biol Chief Pharmacologist Allen & Hanburys Ltd With foreword by Sir Alexander Fleming 1954 Pp xvi + 248 with 53 illustrations and 21 tables London Chapman & Hall Ltd Priced 18s 0d

This small volume is one of the Frontiers of Science series designed to fill the gap in scientific publications between the very elementary expositions and the specialist textbooks Dr Collier has written a most readable and informative book dealing with the sulphonamides and antibiotics in particular but including the chemotherapy of tuberculosis leprosy the malarias and other tropical diseases the text is clear and the bibliography at the end of each chapter well chosen

This is a book that any doctor physician or surgeon could read with benefit because the development of chemotherapy is described remarkably well and none should miss the chapter on drug resistance The only complaint could be that the book is addressed to a group which would find the chemical detail too great but therein lies its value to the doctor

HUMAN FACTORS IN EQUIPMENT DESIGN Edited by W F Floyd and A T Welford 1954 Pp viii + 132 Illustrations 17 London H K Lewis & Co Ltd Price 21s 0d

This book is the second volume of the Proceedings of the Ergonomics Research Society and this body as well as the editors are to be congratulated It has become increasingly obvious particularly over the last twenty years that the performance of machines and mechanical devices is tending to outstrip the power of the operator to make the fullest possible use of their potentialities

Anatomists physiologists and psychologists have therefore co operated with the design and production side to produce fruitful results and such co-operation is becoming more and more significant particularly in the Defence Services The Navy's Oxford Seat is one example of the result of such collaboration

To those who wish to learn more of this little known subject the book is thoroughly recommended

THE ANATOMY OF THE EYE AND ORBIT By Eugene Wolff M B B S Lond F R C S.Eng Ophthalmic Surgeon Royal Northern Hospital Surgeon Moorfields Westminster and Central Eye Hospital Fourth Edition 1954 Pp viii + 492 Illustrations 408 52 in colour London H K Lewis & Co Ltd Price 63s 0d

It is eleven years since the first edition of this work appeared As a textbook which presents in interesting and readable form a description of the development form and detailed structure of the tissues of the eye and its adnexa the book hardly requires introduction It is recommended to all who are interested in the subject

The fourth edition adheres largely to the text of its predecessor Important sections have been rewritten however notably those describing the limbus the canal of Schlemm the optic tract the ora serrata of Gaddes and lateral geniculate body and the development of the vitreous

References to recent literature have been added as footnotes on the relevant pages Over eighty new illustrations have been included and photomicrographs in many places replace the sketches of former editions Many of the new illustrations are in colour

It is with deep regret that the sudden death of the Author who was widely known for his great interest in his subject is noted to have occurred shortly before publication of this edition

REFRESHER COURSE FOR PRACTITIONERS (Second Collection—January 1951 March 1954) By various Authors 1954 Pp 565 Numerous illustrations London British Medical Association Price 25s 0d

When the articles in this volume were published weekly in the *British Medical Journal* the sequence of subjects seemed to be rather illogical and disconnected When they are collected under one cover this disadvantage disappears indeed the random arrangement of subjects adds to the pleasure in reading through this book

The articles are obviously written by masters of the various subjects and do not as sometimes happens in collective works of this kind speak in a condescending fashion to a lower stratum Subjects which are outside the scope of a General Practitioner s normal work are dealt with on general principles and are not obscured by elaboration of specialized methods The articles giving practical details of treatments and methods contain not only well established procedures but also a large amount of new work well within the scope of the General Practitioner or Medical Officer

There is one misprint which should be rectified in future editions—on page 476 lines 31 and 33 the nuclear energy equations should be amended to read

Line 31 $Li^7 + H^1 \cdot^{0075} = He^4 + He^4 + \text{Energy}$

Line 33 $Li^6 + H^2 \cdot^{0248} = He^4 + He^4 + \text{Energy}$

and not H^4 as now occurs in both places

Altogether this is a very excellent and practical manual and deserves to be widely read The publishers are to be congratulated on the format and general layout of this book The index is comprehensive

We acknowledge with thanks receipt of the following publications

Acta Medica et Biologica *Annals of Tropical Diseases Bulletin* *Brainlaw* *British Medical Bulletin* *British Medical Journal* *Bulletin International des Services de Santé* *Bulletin of the World Health Organization* *Guy's Hospital Gazette* *Journal of the Royal Army Medical Corps* *Journal of the Bombay Grant School of Medicine* *Journal of the Irish Medical Association* *Kumamoto Medical Journal* *Medical Journal of Osaka University* *Medical Press* *Middlesex Hospital Journal* *Nile Medical Journal* *Military Surgeon* *Proceedings of the Staff Meetings of the Mayo Clinic* *St Mary's Hospital Gazette* *Sydney University Medical Society Paper* *Tokyo Journal of Experimental Medicine* *Tropical Diseases Bulletin* *Ulster Medical Journal* *United States Armed Forces Medical Journal* *United States Medical Technicians Bulletin* *University of Durham Medical Gazette*

BOOKS RECEIVED

THE MARSHALLS Increasing the Tempo Headquarters United States Marine Corps 14th in a series of Operational Narratives of the Marine Corps in World War II

Notice

Menley & James Limited, Pharmaceutical Manufacturers Coldharbour Lane London S E 5 announce that in order to prevent confusion with other tablets the shape of 'Dimanyl' Tablets has been changed They are now triangular instead of round In all other respects—in composition, purity and therapeutic efficacy—they are unaltered

News of the Service

OBITUARY

[illegible] J. W. W. STANTON, R.N. (Rtd.) died [illegible] 1869 he qualified in 1892 and entered [illegible] Medical Service [illegible] a Surgeon [illegible] the 14th November 1893. He was promoted [illegible] Surgeon in 1901, Surgeon Commander in 1909 and was placed in the Retired List (medically unfit) in November 1911.

Surgeon Captain L. L. ALDERSON, R.N. (Rtd.) died on the 3rd June 1954. Born on the 20th June 1876 he qualified in 1900 and entered the R.N. Medical Service as a Surgeon in February 1901. He was promoted to Staff Surgeon in 1909, Surgeon Commander in 1915 and was placed on the Retired List (age) in 1926 with the rank of Surgeon Captain. He was employed as Local Examining Medical Officer, Southampton from October 1926 until October 1932.

During World War I Surgeon Captain Alderson served in H.M. Ships *Gloucester*, *Forth* and *Ulster*.

Surgeon Captain G. S. HARVEY, *O.B.E.*, R.N. (Rtd.) died on the 30th June 1954. Born on the 30th May 1889 he qualified in 1913 and entered the R.N. Medical Service as a Surgeon Lieutenant in 1913. He was promoted to Surgeon Lieutenant Commander in 1919, Surgeon Commander in 1925 and was placed on the Retired List (own request) with the rank of Surgeon Captain in 1936.

During World War I Surgeon Captain Harvey served in H.M. Ships *London*, *Cordelia* and R.N. Sick Quarters, Invergordon. During World War II he was employed by the Home Office as Medical Instructor at the Civilian Anti-Gas School, Falfield, Gloucestershire and was awarded the *O.B.E.* in the Birthday Honours of 1943.

Surgeon Captain C. H. DAWE, R.N. (Rtd.) died on the 24th July 1954. Born on the 19th April 1878 he qualified in 1903 and entered the R.N. Medical Service as a Surgeon in 1903. He was promoted to Surgeon Lieutenant Commander in 1911, Surgeon Commander in 1917 and was placed on the Retired List (age) with the rank of Surgeon Captain in 1928. He was employed as Local Examiner, Medical Officer, Liverpool from February 1931 until March 1937 and from January 1938 until October 1948.

During World War I Surgeon Captain Dawe served in H.M. Ships *Forward*, *Roberts* and *Greenwich*.

Surgeon Commander O. J. N. KERRIGAN, R.N. (Rtd.) died on the 18th September 1954. Born on the 22nd October 1889 he qualified in 1915 and entered the R.N. Medical Service as a Temporary Surgeon Lieutenant in October 1916. Transferring to the Permanent Service in 1918. He was promoted to Surgeon Lieutenant Commander in 1922, Surgeon Commander in 1928 and was placed on the Retired List (own request) in 1932.

During World War I Surgeon Commander Kerrigan served in H.M. Ships *Lana* and *Cassandra* and was recalled to Service on the outbreak of World War II during which time he served in H.M. Dockyard, Portsmouth and R.N. Barracks, Devonport. He reverted to the Retired List in September 1945.

HIGHER DEGREES

M.D. — Surgeon Lieutenant Commander R. H. Broughton, M.B., Ch.B., M.R.C.S., L.R.C.P., R.N.

PROMOTIONS

To Surgeon Rear Admiral (D)—[illegible] B Osborne Q H D S [illegible] for Dental Service

To Acting Inter[illegible] Commander—G A Binns

To Surgeon Lieutenant Commander—R H Broughton [illegible] Pugh F H [illegible] Warburton [illegible]

To Surgeon Lieutenant Commander (D)—A F J Small

TRANSFERS TO PERMANENT LIST

Surgeon Lieutenant (Acting Surgeon Lieutenant Commander) W B Wilder

ENTRIES FOR SHORT SERVICE COMMISSION

R M Corr M B B S F de S Horton M B B S R C R Lee L D S D R Hunt B D S F P Oliver L M S S A J M Richards M B B Ch H G Scott M B B S M R C S L R C P C W J Fisher M R C S L R C P R J Vaughan M B B Ch

RETIREMENTS

Surgeon Rear Admiral T N H Arey *C B C B E* Q H S Surgeon Rear Admiral (D) F R P Williams *C B E* Q H D S Surgeon Captain J H B Crosbie Q H P Surgeon Commander (D) G Baker Surgeon Lieutenant Commander J C Higginson

WARDMASTER OFFICERS

PROMOTIONS

To Acting Commissioned Wardmaster—L K Bone N C Martin F W Mitchell F V Moth

RETIREMENTS

Wardmaster Lieutenant J T A Sampson Commissioned Wardmaster J A Hall

QUEEN ALEXANDRA'S ROYAL NAVAL NURSING SERVICE

PROMOTION

To Superintending Sister—Miss N H Glew

1954

ADMIRALTY FLEET ORDERS

(This page is perforated for filing)

1768.—Admiralty Surgeons and Agents

1775.—Officers—Medical and Dental—Transfer to Permanent List—Pay and Allowances

1975.—Dental Stores—Dental X-ray Apparatus—Care of

2012.—Medical, Dental and Hospital Consultants.

2013.—Medical—Examinations—Refuge and R.M. Other Ranks—Continuous and Special Service—Examination on Entry.

2014.—Medical—X-ray of Chest

2024.—Courses—Officers—Medical Officers Refresher Courses in Anaesthetics

2072.—Medical—R.A.F. Personnel Treated in H.M. Ships and R.N. Medical Establishments—Disposal of Medical Record Forms

2080.—Surgeons and Agents

2247.—Medical and Dental and Hospital Consultants

2387.—Dental Treatment—Entitlement, Facilities, Records, Returns, etc., and Scale of Fees

2403.—Medical—Dope and Paint Spraying—Precautions.

2407.—Surgeons and Agents

2460.—Medical—Treatment—Visitors to the Channel Islands

2510.—Medical—Mobile Mass Miniature Radiograph Unit—Administration.

2517.—Medical, Dental and Hospital Consultants

2524.—Surgeons and Agents

2537.—Medical and Dental Stores—Unserviceable Medical and Dental Stores in H.M. Ships and Fleet Establishments—Survey and Disposal.

Notice

The Editor invites medical officers to send in original papers on professional subjects travel personal experiences &c Items of news and matters of interest to the naval medical service will be welcomed from ships and establishments on home and foreign stations Notices of births marriages and deaths are inserted free of charge to subscribers

All articles or communications published in the JOURNAL OF THE ROYAL NAVAL MEDICAL SERVICE will become the property of the Journal with full copyright powers, unless the author declares when sending the article that he desires to reserve the copyright to himself All articles should be sent in duplicate.

The Harvard system should be employed for bibliographical references these references being arranged in alphabetical order of the authors names at the end of the contribution thus Smith F G (1935) *J roy nav med Serv* **22** 53" In the text a reference to a publication should be cited by giving the author and in brackets the date thus "Smith (1935) believed this to be due &c"

All communications should reach the Editor on or before the first of the month preceding the date of issue. Unless clearly written they should be typed in order to avoid mistakes and they should be addressed to the Editor JOURNAL OF THE ROYAL NAVAL MEDICAL SERVICE, Monckton House, Alverstoke Gosport, Hants

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The payment of subscriptions by banker's order is recommended as it relieves the subscriber of the necessity of forwarding a cheque each year and simplifies the keeping of accounts.

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